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❖THE CANADIAN❖

Bee Journal | *Poultry Journal*


Edited by D. A. Jones. Edited by W.C.G. Peter.

75c. Per Year.

75c. Per Year.

These are published separately, alternate weeks, and are edited by live practical men, and contributed to by the best writers. Both Journals are interesting, and are alike valuable to the expert and amateur. Sample copies free. Both Journals one year to one address \$1. Until June 1st we will send either Journal on trial trip for 6 months for 25 cts.

The D. A. Jones Co., Ltd., Beeton, Ont.

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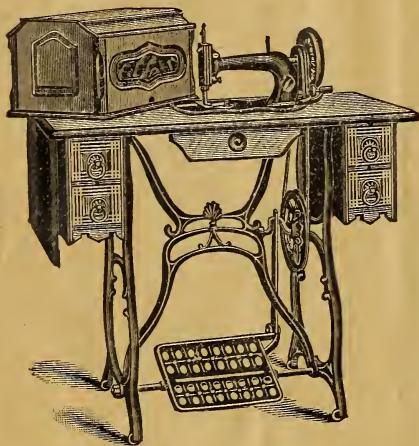
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New London, Wis.

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CLEVELAND OHIO.
SEND FOR CATALOGUE.

Please mention this paper



THE NEW FAMILY SINGER SEWING-MACHINE.

Made from latest models: first class in every respect, and warranted for 5 years. A boon to many an overworked housewife who can not afford to pay the price usually asked by agents. Cut shows No. 4. No. 1 is the same without the cover, leaf, and two drawers. Price \$11.00. No. 2 has a cover, but no leaf or side drawers. Price \$12.50. No. 3, as shown in the cut, without the 2 side drawers at the right. Price \$14.00. No. 4, shown in the cut, price \$15.00. No. 5 has 3 drawers on each side. Price \$16.00. We can furnish a high-arm Singer, in any of these Nos., if preferred, at \$2.50 extra. Wood parts are oil polished, walnut; balance-wheel is nickel plated, and each machine includes a full set of attachments, with instructions for use. We ship them direct to customers from factory in Chicago. We have a catalogue giving cut of each machine and full description which we shall be pleased to mail on application.

A. I. ROOT, Medina, Ohio.

NICKEL-PLATED "LEADER" SHEARS.



Elegantly Nickel-Plated Steel Shears At Less than Half the Usual Price.

TABLE OF PRICES.

TABLE OF PRICES.						Prices		
Postage.	Name and size.					Each.	$\frac{1}{2}$ doz.	3 doz.
5	6	inch	nickel	Leader	Shears.....	\$ 20	\$1 10	\$ 6 00
5	5	6½	"	"	"	25	1 25	7 00
5	7	"	"	"	"	30	1 40	8 00
5	5	7½	"	"	"	35	1 60	9 00
5	8	"	"	"	"	40	1 80	10 00
6	6	8½	"	"	"	45	2 00	11 00
7	9	"	"	"	"	50	2 25	12 00

About two years ago we bought 150 dozen of above shears, and they have gone off like "hot cakes"—so much so that we have just bought another lot of 350 dozen, which are, if any thing, nicer than the other lot, most of which are gone. The others pleased so well that we got repeated and increased orders from the same parties. Neighbors of those who were fortunate enough to get a pair, on seeing them and learning the price, wanted a pair, and so the orders kept repeating themselves. We are always glad to give our customers a bargain which gives more than satisfaction, and this is one of them. You will see we have made special prices in quantities, and no doubt some of you can do a good thing for yourselves, as well as your neighbors, in getting a quantity and introducing them. They are put up $\frac{1}{2}$ dozen in a box, and we can not assort $\frac{1}{2}$ dozen; but we can give you larger lots assorted, $\frac{1}{2}$ dozen of a kind.

A. I. ROOT, Medina, O.

ONE COLONY Saved from Death the Coming Winter Would Repay the cost of a copy of "ADVANCED BEE CULTURE" ten Times Over. In 5 of its 32 Chapters may be Found the Best That is Known upon Wintering Bees. It costs 50 cents but its Perusal may Make you \$50 Richer next Spring. The "REVIEW" and this Book for \$1.25. If not Acquainted with the "REVIEW," send for Samples. W. Z. HUTCHINSON, Flint, Michigan.

LITHOGRAPH LABELS

In 12 Colors, at \$2.00 per 1000.

The 12 colors are all on each label. They are oblong in shape, measuring $2\frac{1}{2} \times 2\frac{1}{2}$. They are about the nicest labels we ever saw for glass tumblers, pails, and small packages of honey. We will mail a sample, inclosed in our label catalogue, free on application, and will furnish them postpaid at the following prices: 5 cts. for 10; 25 cts. for 100; \$1.00 for 500; \$1.75 for 1000. A. I. Root, Medina, O.

SECTIONS.

\$2.50 to \$3.50 per M. Bee-Hives and Fixtures cheap. **NOVELTY CO.,**

6tfdb Rock Falls, Illinois.
In responding to this advertisement mention GLEANINGS.

\$11.00 FOR \$4.50.

GENERAL GRANT'S MEMOIRS,
ORIGINAL \$7 EDITION,
FOR 50 CENTS,

IN COMBINATION WITH THE COSMOPOLITAN MAGAZINE, \$3.00, AND GLEANINGS, \$1.00.
IN ALL, \$4.50.

Over 650,000 copies of U. S. Grant's Memoirs have been sold by subscription at the original price of \$7.00 for the two volumes. We have them in our library, and no doubt many of our readers have also. Those who have not can never have a better opportunity than this. The books offered are no cheap reprint, but guaranteed to be identical in style and finish with the original subscription edition. This offer is made possible only by the enterprise of the publishers of the *Cosmopolitan*, who purchased no less than 600,000 volumes of the Memoirs with the view of greatly increasing their already large subscription list. They could not afford to do it if they did not have such confidence in the character of their magazine that they expect to keep as permanent readers most of the subscribers they will by this means secure. The illustration and printing of this monthly surpasses any other we are acquainted with, and most of the articles are on live topics of the times. The price, too, without a premium, is as low as the lowest. Remember, that for \$4.50 you get this excellent magazine one year; GLEANINGS one year, and U. S. Grant's personal memoirs. At this rate the books will be sent by express at your expense; or, if you send 50 cents extra, they will be sent postpaid. If any already have Grant's Memoirs you may have instead at the same rate:

Gen. Sherman's Memoirs, 2 vols.; retail price \$5.00
Gen. Sheridan's " " " " 6.00
Gen. McClellan's " " " " 3.75

Postage in each case, 42, 46, and 24 cents extra. The books can not be sold separately, or extra copies for less than \$4.00 in each case, and postage extra. If you are not acquainted with the *Cosmopolitan*, address them at Madison Square, New York, for a free sample copy; but address all orders for books and subscriptions to

A. I. ROOT, Medina, O.

P. S.—To new subscribers to GLEANINGS we will send from time subscription is received till Jan., 1893.

WINTER APPLES.

LEADING VARIETIES.

How much am I offered? Can spare a few hundred bushels. Address

J. B. MURRAY, ADA, OHIO.

Bee-Hives, Sections, Etc.

BEST GOODS at LOWEST PRICES.

We make 15,000 sections per hour. Can fill orders promptly. Write for free, illustrated catalogue

G. B. LEWIS CO., WATERTOWN, WIS.

Western Bee-Keepers' Supply House

Root's Goods can be had at Des Moines Iowa, at Root's Prices.

The largest supply business in the West. Established 1885
Dovetailed Hives, Sections, Foundation, Extractors, Smokers, Veils, Crates, Feeders, Clover Seeds, etc. Imported Italian Queens, Queens and Bees. Sample copy of our Bee Journal, "The Western Bee-Keeper," and Latest Catalogue mailed Free to Bee-keepers.

JOSEPH NYSEWANDER, DES MOINES, IOWA.



6tfdb

BEST ON EARTH



ELEVEN YEARS WITHOUT A PARALLEL, AND THE STANDARD IN EVERY CIVILIZED COUNTRY.



Bingham & Hetherington
Patent Uncapping-Knife,
Standard Size.

Bingham's Patent Smokers,

Six Sizes and Prices.

Doctor Smoker,	3 1/4 in.,	postpaid ..	\$2.00
Conqueror "	3 "	" ..	1.75
Large "	2 1/2 "	" ..	1.50
Extra (wide shield) "	2 "	" ..	1.25
Plain (narrow " "	2 "	" ..	1.00
Little Wonder, "	1 1/4 "	" ..	.65
Uncapping Knife.....			1.15

Sent promptly on receipt of price. To sell again, send for dozen and half-dozen rates.

Milledgeville, Ill., March 8, 1890.

SIRS:—Smokers received to-day, and count correctly. Am ready for orders. If others feel as I do your trade will boom. Truly, F. A. SNELL.

Vermillion, S. Dak., Feb. 17, 1890.

SIRS:—I consider your smokers the best made for any purpose. I have had 15 years' experience with 300 or 400 swarms of bees, and know whereof I speak. Very truly, R. A. MORGAN.

Sarahsville, Ohio, March 12, 1890.

SIRS:—The smoker I have has done good service since 1883. Yours truly, DANIEL BROTHERS.

Send for descriptive circular and testimonials to
1tfdb **BINGHAM & HETHERINGTON, Abnoria, Mich.**

In responding to this advertisement mention GLEANINGS.

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SPECIAL NOTICES.

SOME NEW TOOLS.

We are carefully watching the market in tools; and when any thing comes out that is really superior to what is already in the market, we expect to be able to furnish it.

PLIERS WITH PARALLEL JAWS.

All ordinary pliers, as you may have noticed, are faulty when you come to grasp any thing with any degree of thickness, because their jaws open at an angle; and the wider they open, the more obtuse the angle, and the greater danger of slipping. Well, a new plier has been brought out with jaws that are constantly parallel. There are three sizes—50, 65, and 90 cents each respectively. The smallest size will open its jaws half an inch; the larger sizes a little more, of course. They are also a great deal stronger than the smaller size. The smallest size is $\frac{3}{4}$ inches long; the next $\frac{5}{8}$, and the largest size is 6 inches. The jaws are of the finest tempered steel, and a groove is made longitudinally in the center of each jaw, for grasping different sizes of wire. The jaws are not only parallel, but they have an immense lever purchase. If wanted by mail the postage will be respectively 5, 7, and 8 cents each.

The next thing is

TINNERS' SNIPS AT A LOW PRICE.

Did you ever borrow your wife's shears to cut a piece of tin, and spoil your tin and your shears also, and possibly spoil your wife's temper—or, if not quite that, give it a pretty severe strain? Well, there is no need of your doing so any longer, for you can get a pair of tinner's snips, made of malleable chilled iron, for only 25 cents. When I look at such a tool it seems ridiculous to offer it at such a low price. It is almost a foot long, and weighs 1 lb. 6 ounces. In fact, it is so heavy that, if you want it by mail, you will have to pay 25 cents postage on it.

A STEEL HATCHET FOR 35 CENTS.

I have been for many years watching for something really serviceable that can be furnished for less than half a dollar; and now we have it—a good steel hatchet for only 35 cents. This is too heavy to send by mail, so you will have to get it with other goods by express or freight. Who has not seen the time he would not almost give the above amount for a good hatchet to use one day? You need one in the barn, and then your wife should have a good hatchet to be her own property; and when the children get older, she should teach them how to use it without chopping their fingers or toes. Sometimes we are inclined to say that a ten-cent cast-iron hatchet is good enough for the *women*-folks. Well, it is a good deal better than no hatchet at all; but my wife deserves a better hatchet than a ten-cent one. How is it at your house? A few days ago I called for a hatchet in a great hurry, and was a good deal disgusted when my wife produced a cast-iron one. When I expressed my displeasure she said somebody borrowed her nice hatchet, and did not bring it back; and when she sent for it they sent *that* thing. It was just the same way with her nice kitchen saw. It was not the neighbors, dear friends—it was only some of our own men on the premises who had it, and I suppose they thought the cast-iron hatchet was the one I furnished her, and which she called her own property. Now, I am going to take a good saw and a good hatchet this very minute, and give my wife. She has worked very hard, not only while I had the fever, but she did a

splendid job of house-cleaning since then. By the way, don't these women-folks of ours deserve good nice tools? May be you don't think they understand or appreciate them. But just you try giving your wife a saw or a hatchet, or even a pair of pliers. May be she would like a pair of shears to prevent the children and other folks from using her good ones. By the way, has she got the nicest pair of shears you can find in your market, and are they kept in nice cutting order? If you do not know how to put a pair of shears in nice cutting order, you ought to be ashamed of yourself. And this brings in the matter of nice little grindstones, whetstones, and oilstones. We have them all in our price list; and, by the way, have you had a new price list lately? If not, drop us a postal. You see, as I have got to feeling real well I am naturally full of business.

KIND WORDS FROM OUR CUSTOMERS.

Your Benton cages are indeed greatly improved. The Porter bee-escape is something that can not be valued enough. The old queen you sent me last fall is pure three-banded Italian, and does well yet. She made a strong colony. L. HAMMERSCHMIDT.
Amana, Ia., Aug. 17.

Please insert my name in your list of "Untested Queens." I see you insert free the first time, so I will send 20 cts. for another insertion. I think this will bring all the orders I can fill, if it works like the other ads you gave me. They brought so many orders that I had to take queens from full colonies; but I would not keep a customer waiting if I had to do it again, for I know by sad experience what it is to wait several weeks for a queen after she is paid for.
E. C. EAGLEFIELD.

Berlin, Wis., Aug. 7.

Wire Cloth.

For door and window screens, tacking over hives and nuclei for shipping, making bee and queen cages, and a variety of purposes. We have the following list of green and black wire cloth which is not exactly first class, but is practically as good for the purposes mentioned, and at prices MUCH BELOW the ordinary price. You can no doubt select from this list a piece to suit your needs. Price in full pieces, $1\frac{1}{4}$ cts. per square foot. When we have to cut it, 2 cts. In case the piece you order may have been taken by some one else before your order comes, please say whether we shall send the nearest in size, or cut one the size and rod at 2 cts. per ft., or give a second or third choice.

No. of Rolls, and Color.	Width, In's.	Length, Ft.	Sq. Feet.	Price of a Full Roll.	Pieces less than 100 ft. long. These figures are the number of square feet in each piece. Multiply by $1\frac{1}{4}$ cents for the price of piece.
10 green	8	100	67	\$1.17	65, 64, 63, 62, 63, 62.
25 green	12	100	100	1.75	
5 green	24	100	200	3.50	140, 8, green; 200 black.
35 green	26	100	217	3.50	This is below reg. pr. of $1\frac{1}{4}$ c.
14 green	28	100	233	4.08	224, 224, green.
15 green	30	100	250	4.37	
11 green	36	100	300	5.25	
6 black	38	100	317	5.54	269, black; price \$4.70
5 green	38	100	317	5.54	
3 black	40	100	333	5.83	
7 black	42	100	350	6.12	
15 green	30	100	250	4.37	

A. I. ROOT, Medina, Ohio.

WANTED.—To sell fifty colonies of bees. Will take \$100.00 for them on the ground.
C. G. STRONG, Atoka, Tipton Co., Tenn.

Hatch Chickens by Steam. IMPROVED EXCELSIOR INCUBATOR



Will do it. Thousands in successful operation. Simple, Perfect and Self-Regulating. Lowest-priced first-class Hatchery made. Guaranteed to hatch a larger percentage of fertile eggs at less cost than any other.

Send 6c. for Illus. Catalog. GEO. H. STANT, Quincy, Ill.

In responding to this advertisement mention GLEANINGS.

HONEY COLUMN.

CITY MARKETS.

PORTLAND.—*Honey.*—There is very little Oregon honey being offered here this season. From reports there is a very short crop. There is comparatively little honey raised in Oregon anyhow. We bought one lot of very fine white honey from one party and paid him 14½¢ for same. We are selling California honey at 17¢ for white, and 15 to 16¢ for dark. There is very little demand here for beeswax.
LEVY, SPIEGEL & Co.,
 Portland, Oregon.

CINCINNATI.—*Honey.*—Demand for honey is slow, owing, perhaps, to the abundance of fruit, to warm weather, or to the low price of sugar. There is a good supply of all kinds. Extracted honey brings 5¢ a lb. on arrival. Comb honey, 12½¢ in the jobbing way. There is a fair demand for beeswax at 23½¢ on arrival for good to choice yellow. Supply is good.
C. F. MUTH & Sox,
 Cincinnati, O.

ALBANY.—*Honey.*—Receipts are quite large, but there is no accumulation. Stock is selling on arrival at following prices: White clover fancy 1-lb. sections, 15¢; fair to good, 12½¢; mixed, 10½¢; buckwheat, 9½¢. We are unable to fill our orders for 2-lb. section buckwheat, as there are so few coming forward. Extracted selling freely at 7½¢ for light, and 6½¢ for dark and mixed. *Beeswax*, 24½¢.
CHAS. McCULLOCH & Co.,
 Oct. 20. 393, 395, 397 Broadway, Albany, N. Y.

NEW YORK.—*Honey.*—Honey market is improving and looks a little healthier. Honey is quite plentiful, especially clover and basswood. Our quotations are as follows: 1-lb. fancy clover, 14½¢; fair, 12½¢; 2-lb., fancy, 12½¢; fair, 11. Buckwheat, 1-lb., 10¢; 2-lb., 9. Extracted honey, clover and basswood, 6½¢; buckwheat, 5½¢.
CHAS. ISRAEL & Bros.,
 Oct. 19. New York.

KANSAS CITY.—*Honey.*—Demand good for comb and extracted; supply light. We quote: White 1-lb. comb, 15½¢; dark, 10½¢. Extracted, dark, 5½¢; white, 7½¢. *Beeswax*, 23½¢. We would advise shippers to get their honey into market before cold weather.
CLEMONS, MASON & Co.,
 Oct. 20. Kansas City, Mo.

NEW YORK.—*Honey.*—Demand for comb honey has increased since the weather has become cooler, but buyers are not inclined to pay high prices. We quote: Fancy white, 1-lb., 14½¢; fair, 12½¢. Buckwheat, 1-lb., 10½¢. Extracted, basswood, 7½¢; California, 7¢; Southern, 6½¢ per gallon. *Beeswax*, 26½¢.
F. G. STROHMAYER & Co.,
 Oct. 17. New York.

KANSAS CITY.—*Honey.*—Honey demand good, with a good supply. We quote 1-lb. white comb, 15½¢; dark, 12. Extracted, white, 7½¢; dark, 5½¢. No beeswax on hand.
HAMBLIN & BEARSS,
 Sept. 19. 514 Walnut St., Kansas City, Mo.

DETROIT.—*Honey.*—Comb honey selling more freely at 12½¢; supply not large. Extracted, 7½¢; stocks low. *Beeswax*, 25½¢, dull.
M. H. HUNT,
 Oct. 20. Bell Branch, Mich.

CLEVELAND.—*Honey.*—Honey market continues about the same; demand fair; 16¢ for white comb 1-lb. sections. Dark honey slow at 11 to 13¢. *Beeswax* scarce at 25½¢.
A. C. KENDEL,
 Oct. 20. Cleveland, O.

ST. LOUIS.—*Honey.*—Market unchanged; demand quiet. Prime beeswax, 24¢.
D. G. TUTT GRO. Co.,
 Oct. 19. St. Louis, Mo.

I am prepared to furnish pure extracted honey in 60-lb. tin cans. New cases and cans; graded goods. Carloads a specialty. Address
E. LOVETT, San Diego, Cal. ☐

FOR SALE.—6000 lbs. extracted honey, in 60-lb. cans.
C. H. STORDOCK, Durand, Winnebago Co., Ill.

FOR SALE.—1000 lbs. of buckwheat comb honey.
20d D. F. LASHIER, Hooper, Broome Co., N. Y.

Wants or Exchange Department.

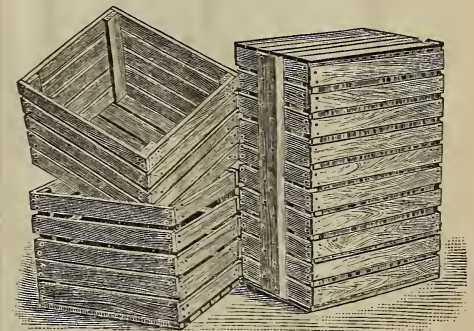
Notices will be inserted under this head at one-half our usual rates. All advertisements intended for this department must not exceed five lines, and you must say what you want advertised in this department, or we will not be responsible for errors. You can have the notice as many lines as you please; but all over five lines will cost you according to our regular rates. This department is intended only for bona-fide exchanges. Exchanges for cash or for price lists, or notices offering articles for sale, can not be inserted under this head. For such our regular rates of 20 cts. a line will be charged, and they will be put with the regular advertisements. We can not be responsible for dissatisfaction arising from these "swaps."

WANTED.—To exchange wall paper, from 5¢ a roll and up, for honey. **J. S. SCOVEN,**
 12tfdb Kokomo, Ind.

WANTED.—To exchange a good printing-press and 9 fonts type, value \$14; also 6 pair prize-winning Brown Leghorns, for gun, silver watch, or offers. **W. H. LAWS, Lavaca, Ark. 21-22**

A COPY of South Florida Home in exchange for your name on a postal card.
Y. G. LEE, St. Petersburg, Fla.

A New POTATO-BOX Made Entirely of Slats.



This kind of box has been several times recommended, but we have not made them till now. We are having quite a trade on potato-boxes, and find difficulty in getting lumber to make the ends of one piece, so we have tried putting slats in both ends and sides as well as bottoms. The cut above shows 2 boxes nailed alongside of a package of 15, put up ready for shipment. We make them the same size as the other styles, 14½x16½x12½ deep outside measure, with six slats on the bottom, five on each side and each end, and a slat up each corner. It makes a lighter and stronger box, and we can also furnish them cheaper. We put them up in packages of 15—two nailed up and the other 13, with nails, packed inside. Weight of the package, 100 lbs., and the price \$1.50, which equals 10 cts. each in full packages; 10 packages, 5 per cent off. Nailed up, 15¢ each. In ordering, call this the *All slatted box*.

A. I. ROOT, Medina, Ohio.

A Four-Color Label for Only 75 Cts. Per Thousand.

Just think of it! we can furnish you a very neat four-color label, with your name and address, with the choice of having either "comb" or "extracted" before the word "honey," for only 75 cts. per thousand; 50 cts. per 500, or 30 cts. for 250, postpaid. The size of the label is 2½x1 inch—just right to go round the neck of a bottle, to put on a section, or to adorn the front of a honey-tumbler. Send for our special label catalogue for samples of this and many other pretty designs in label work.

A. I. ROOT, Medina, O.

LADIES' FINE SHOES.

PRICE ONLY \$2.

Genuine Kid, Soft Soles, Elegant Style; Broad or Narrow Toe. Sizes, 2 to 8. C, D, E, and E E widths. This Shoe is sold at \$3 in all retail stores.

OUR PRICE \$2, POSTPAID.

FIT, STYLE, AND WEAR GUARANTEED.

NO SHODDY, BUT GOOD SHOES.

Send P. O. order, Registered Letter or Postal Note.

C. L. GRIESINGER, MEDINA, OHIO.

Reference, GLEANINGS.

18-19-20-21d

In writing advertisers please mention this paper

EARLY QUEENS.

In March and April, from apiary in Texas, the choicest 5-banded stock, warranted purely mated. One, \$1.25; 6 for \$6.00.

BREEDING QUEENS.

From home apiary in April or May, \$3.00 to \$5.00 each. All orders filled promptly. Send your name NOW for full particulars, ready in February or fore part of March. Safe arrival and entire satisfaction guaranteed or money refunded. Orders booked now, pay when you want the queens.

S. F. & I. TREGO, SWEDONA, ILL.

Please mention this paper.

14tdb

Boxes and Shipping-Crates.

EVAPORATED APPLE-BOXES and

SHIPPING-CRATES A SPECIALTY.

In this line we take the lead. If any one reading this ad. will send us the name of driers we will make it right with them. Send for prices. Address

W. D. SOPER & CO., JACKSON, MICH.

15-17-19-21d

Please mention this paper.

BERRY PLANTS. Grape Vines. Fruit Trees. Small fruit plants. Large stock. Low prices. Catalogue free. WM. STAHL, Quincy, Ill.

~~~~~MUTH'S~~~~~

## Honey - Extractor.

Square Glass Honey-Jars,

Tin Buckets, Bee-Hives

Honey-Sections, &c., &c.

Perfection Cold-Blast Smokers.

APPLY TO

CHAS. F. MUTH & SON, Cincinnati, O.

P. S.—Send 10-cent stamp for "Practical Hints to Bee-keepers."

Please mention this paper.

## Porter's Spring Bee-Escape.

We guarantee it to be the best escape known, and far superior to all others. If, on trial of from one to a dozen, you do not find them so, or if they do not prove satisfactory in every way, return them by mail within 90 days after receipt, and we will refund your money.

PRICES—Each, by mail, postpaid, with full directions, 20c; per dozen, \$2.25. Send for circular and testimonials. Supply dealers, send for wholesale prices.

10tfdb R. & E. C. PORTER, LEWISTOWN, ILL.

In responding to this advertisement mention GLEANINGS



A glimpse of our Factory, now making carloads of Dovetailed Hives, Lang, Simp. hives, plain Lang. hives, Alternating hives, Chaff hives, sections, etc. Many articles not made by others.

We can furnish, at wholesale or retail, Every thing of practical construction needed in the apiary, and at Lowest Prices. Satisfaction guaranteed. Send for our New Catalogue, 51 illustrated pages, free to all.

E. KRETCHMER, Red Oak, Iowa.

In responding to this advertisement mention GLEANINGS.



## PRINT YOUR OWN CARDS

PRESS \$3.00

Circular Size \$8.00

Press for a small newspaper \$44.

Please mention GLEANINGS.

**SAVE MONEY!** Make money printing for others! Type setting easy; printed instructions. Send 2 stamps for Catalog of Presses, Type, Cards, Paper, &c., to the Factory.

**KELSEY & CO.,**  
Meriden, Connecticut

19-20-21

## For Sale, Portable Engine on Wheels

8 H. P., in good repair. Will sell AT A BARGAIN if taken at once. Address

LOWRY JOHNSON, Masontown, Pa.

N. A. KNAPP, Rochester, Lorain Co., O.,

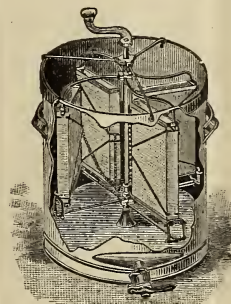
HAS FOR SALE

50 STRONG COLONIES OF PURE ITALIAN BEES,  
500 WHITE AND BLACK FERRETS.

Also a fine lot of Scotch collie and coon-dog pups. Prices sent on application.

17tfdb

Please mention this paper.



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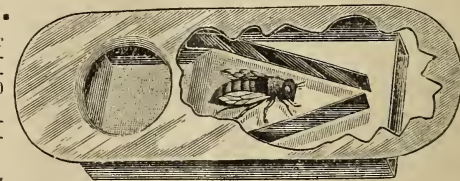
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Vol. XIX.

NOVEMBER 1, 1891.

No. 21.

## STRAY STRAWS

FROM DR. C. C. MILLER.

HAD TO FEED this fall.

FINISHED HAULING home bees from out-aparies October 12.

DID YOUR CROP bring enough money to take you to Albany?

GEO. E. HILTON says he believes in handling hives and frames less; "but if either must be handled, let it be the frames."

THE *British Bee Journal* is not often caught napping; but two pages in the number for Oct. 1 are filled from GLEANINGS and credited to *Review*.

GRANULATED HONEY, mixed in small quantity with liquid honey, will hasten granulation. This in reply to the question on page 815. What additional help can be given?

EIGHT-FRAME HIVES may be best for comb honey—I don't know. But the man who uses them in this region must be willing to feed, if necessary, every fall and spring.

UNCAPPING CELLS to get bees to empty honey is not as good as Cheshire's plan of striking a few times on the cappings with a wire hair-brush. The latter is quicker and easier.

"THE DRONE is sealed 16 days, and is impotent until 12 or 14 days old; he must, therefore, be sealed about 7 days before the egg to produce the queen was laid if he is to be in time for service."—*Cheshire*.

YOUR PUNICS in Medina, you say, look just like ordinary black bees. Well, mine didn't; that is, the workers that came with the queens from England. They were black—decidedly blacker than common blacks.

SAY, ERNEST, is there any more weight on the two horizontal wires in my way of wiring than if you had two horizontal wires without any perpendicular wires? Still, they're stretched tighter and might break easier.

BEES DON'T GNAW through duck or oil cloth, according to Prof. Cook and the *A. B. J.* Somehow holes get in duck or oil cloth, if placed over my bees, and it would be hard to convince me that the bees don't gnaw the holes.

VENTILATION in hauling bees is rightly insisted upon as very important. But let me whisper in your ear that I haul my bees every fall and spring with no other ventilation than the usual entrance covered with wire cloth.

AT CHICAGO we always have good conventions, and we expect this year to have the editors of *A. B. J.*, *Review*, and GLEANINGS. So we ought to have an extra good convention. Nov. 19 and 20, at Commercial Hotel, 9 A. M. Excursion rates. Come.

TELL RAMBLER we are sorry I said any thing about his *we's* and *I's*. It never entered our head, Rambler, that you'd make such a fuss about a thing of so little importance, and I give you our full permission to mix your pronouns to suit thyself.

SAY, YOU, Prof. Cook, do you think it's nice of you to keep the people of Colfax away from Albany Dec. 8, and to coax A. I. Root along with you? Never mind; we'll have Ernest there, and I always could have more fun with one of my own age.

DOUBLING UP colonies for the honey harvest results in gain, but only up to a certain point, according to Cheshire. He says, "Careful experiments seem to indicate that, after 12 lbs. of bees have been heaped together, the loss is greater than the advantage."

ANENT GOLDEN CARNIOLANS, J. A. Green, in *A. B. J.*, wants to know, if they are pure, and it is the natural tendency of Carniolans to turn yellow, why they don't follow out that natural tendency in their native land. Don't ask impertinent questions, Jimmie.

AT OSWEGO, Ill., I saw a swarm-catcher used by Mrs. Morrison. It is simply a large wire-cloth cage, 3x2x2 feet, open only on the under side. When a swarm starts out from a hive, and you don't want it to mix up with any thing else, just cover up hive and all, and there you are.

IN REPLY to W. L. Smith (page 821), I can not now say positively as to the character of queens raised in a hive with the old queen caged, but I have always been under the impression that they were as good, and in some cases better, than if the old queen were taken away altogether.

FRIEND ROOT (page 819) advises against feeding meal when natural pollen comes. Don't worry; the bees'll not take it then. But I'm not so sure of the wisdom of advising against it when there's old bee-bread in the combs. Doesn't it stir up the bees to breed more when they get some substitute from the *outside*?

FATHER LANGSTROTH (page 806) is ready to give to C. J. Robinson all the credit he deserves. I wish Mr. Robinson were magnanimous enough to return the compliment, instead of laboring through columns of the *American Bee-keeper* trying to belittle Mr. Langstroth, and to show that the credit so generally given him is not deserved.

DOOLITTLE'S ADVICE on page 804, about bait sections, is excellent, and I'd be sure that they are thoroughly cleaned out in the fall, by setting them outdoors and having the finishing touches put on by bees from all the hives, only taking the precaution to allow passage for one bee at a time. Often bees will fail to clean the sections thoroughly if put in a super over a hive.

SOME THINK that a strong colony can hardly be got into an eight-frame hive. This fall I put into eight-frame hives, without any trouble, three colonies which had good queens, said queens having had free range in three to five stories. I had just as strong colonies among those that had been in eight-frame hives all summer; but, as a general rule, more combs give stronger colonies.

### HAULING HOME OUT-APIARIES.

A. N. DRAPER CRITICISES SOME OF E. R.'S STATEMENTS.

*Mr. E. R. Root:*—I wish to protest some against your article on page 749, on handling hives more and frames less. To start with, are you not a little off in your heading? I can't see that you advocate handling hives any whatever in your article. You simply advocate Mr. Quinby's ideas of twenty years ago; viz., simply to judge from outside appearances, instead of handling frames. This you incorrectly call "handling hives more and frames less." In the second column you say, "Where fixed frames give us an advantage on the subject of handling hives more and frames less, is, that we can pick up two, three, or four frames at a time. This is especially advantageous in forming nuclei." I do the same thing with loose frames—simply slip a finger between each of the ends of the frames. Don't you think you are overdoing the thing in order to boom the fixed frame?

Turn back to page 737. Don't you think your statements look a little "fishy"? Now, 57 hives at 67 lbs. to the hive would be 3819 lbs.; add to this your weight and that of your driver, probably 300 lbs. more, and you would have 4119 lbs. net; besides, the hives were wet, and the wheels would pick up 200 or 300 lbs. more of mud. In addition to this your road was hilly, and it naturally was slippery from the recent shower on it.

You say that one of your horses was Mike. Wasn't the other old Jack? See on page 599, under the text, "A righteous man regardeth the life of his beast." Now, my Christian friend, did you actually overload that poor old heavy horse in that way? I really had a better opinion of you than that. I can't believe it. I don't believe your team could pull any such load under such circumstances. Isn't it possible that you did not have so many hives on the wagon, or else you overestimated the weight of the hives? Another thing, you state that there was no ventilation except the wire over the entrance. Now, if it has been as warm there as it has here, all of those bees would have been suffocated; or you may have had so few bees in the hives that they were all right; in which case your hives were so weak that they would hardly be worth moving. I have moved lots of bees, and I have got to move 195 hives back home very soon; but I shall wait till cooler weather. I find that from 20 to 25 hives make a load for a team. My hives are large, and there are bushels and bushels of bees in them. Now, if I should close them up as you advise I should ruin the whole outfit. A. N. DRAPER.

Upper Alton, Ill., Sept. 28.

[No, I think my heading was all right. When I lift off the cover and look over the tops of the frames, and diagnose its condition, without even lifting a frame, I am handling hives and not frames; or, if you choose to press the point, handling a hive-cover or a part of a hive. When I take up four frames at a time I am handling half a hive at a time. When I lift or

weigh a hive to ascertain the amount of stores, I am certainly handling hives in this case, am I not? It is true, you can pick loose frames two or three at a time. I have done it myself. But you must take *two* hands, and be very careful; and if a bee stings one of your fingers, you must take the grief until you can set the frames down. I have handled four Hoffman frames of bees with one hand; i. e., can carry the same to another hive.

I did not intend to claim originality for the scheme of handling hives more and frames less. I gave credit to Mr. Quinby, Heddon, L. C. Root, Hoffman, and others (see page 713). Then, again, if you will refer to page 749 you will see that I acknowledged that the scheme I outlined was probably in use more or less by practical bee-keepers.

On page 737 I said in one place the load weighed something over a ton and a half; and in another that the hives weighed from 60 to 75 lbs. each. The first estimate was made by our teamster, and was about correct. The weight of the hives was made by one of our men who lifted off many of the hives after arriving home. After all, the team was perfectly able to pull either weight, though hereafter, thanks to you, friend Draper, I will ascertain correct figures when I speak of loads in print.

There is one thing I am certain of—there were 57 colonies on the wagon. They were counted on the wagon, and after they were carried into the apiary.

In regard to the mud, your imagination is a little vivid. The rain was furious for only a very short time; but the water, almost all of it, ran immediately away. The road was through a sandy and gravelly region, so that there was almost no mud clinging to the wheels. Yes, the other horse was Jack; but he is in pretty good spirits and health, and has been for three or four months back. Both of the horses are of the Clydesdales, of the heavy draft type, and are counted as one of the strongest teams in this county. We were two hours in making the seven miles; and as we stopped at the top of the hills, they pulled the load with ease. Remember, too, we hauled the bees at *night*, and it was quite chilly besides.

Let me now pick *you* up on a point. It sounds to me a little "fishy" when you say your hives contained bushels and bushels of bees. I agree with you that, if you were to close up such colonies on a hot day, leaving ventilation only through the entrance screen, the bees would be smothered; and I agree with you that, if you use the large Dadant hives, you would not want to get more than 20 or 25 on a load. If you will refer back to my article again, you will see that I was not talking about that kind of hives, and I did not claim that they contained bushels of bees, nor did I advise any one to put 57 such colonies on one load. Has not your disgust at fixed frames led you into some wrong impressions?]

After making the footnote above I thought it was no more than fair to submit a copy to friend Draper, as it was evident that he had misunderstood me in several places, and very possibly he might wish to make some comment. He has done so; and as he has suggested so many points that I omitted to mention before, I thought best to give place to the whole, as the controversy may bring out some facts valuable to beginners if not to the more experienced bee-keepers.

*Friend Ernest:*—Perhaps I was a little too fast; but moving bees is a particular hobby of



mine. I at least *think* I know how it ought to be done. Had I received your letter a little sooner I should have modified my queries somewhat on page 463, *American Bee Journal*. In the first query my idea was more to poke a little fun at you than any thing else.

If I am not laboring under a false impression you have been using the "Shane apiary" for queen-rearing; consequently your colonies are not full of bees. Say! I really have got "bushels and bushels" of bees in my hives; and I borrowed the expression, "bushels and bushels," from GLEANINGS. I think it was in an article (and in the note under it) by Mr. Oliver Foster; any way, it was in an article from some one in Iowa. However, if you have any doubts about it, next summer, when I am ready to move my bees, bring your own measure and come and measure them. If I don't have the "bushels and bushels" of bees in my hives I will pay all of your expenses and \$100 per day for your time coming and going. I don't even claim that I have a bushel in the best hive that I have, but that all of my hives collectively contain bushels and bushels.

Why, my Christian friend, I am not disgusted with fixed frames. Were I to begin again I would have no other kind. Still, I would have them much larger than the Simplicity. One of the greatest advantages of the closed-end frames you don't seem to appreciate; and that is in wintering and in breeding up in the spring, as the closed-end frames prevent all circulation around the edges of the frames.

I always look for the editorials over E. R., and Notes from the Home of the Honey-bees, the first thing I do when I receive GLEANINGS. I find that horses are frequently overloaded and abused all over the country. I sometimes overload them myself. I have suffocated more than one lot of bees by not giving air enough. Think what a faithful old horse receives for all of his hard work! See what kind of old musty hay lots of them receive! Lots of horses receive feed so badly spoiled that it actually gives them disease from which they never recover. I think your article would have a tendency to encourage some of your readers not only to overload their horses, but to smother some of their strong colonies of bees.

I'll admit at once that I have a very vivid imagination, and I really enjoy it at times very much. To convince you of the fact, I can imagine just how you looked and felt when it began to rain before you had your bees fastened in the hives. I can imagine how you felt after you had carried about a dozen hives around that house and ducked your head down to keep from knocking your hat off. Perhaps a limb caught in your veil and tore a hole in it. A bee might have stung you on the back of the neck, or your eye-glasses have got so much rain on them that you would have to stop frequently to wipe them. I can imagine how you looked while you were "crawling" over that fence with a hive of bees in your arms. But really I can't imagine why you did not lay the fence down out of your way. I can imagine how tired you were when you got home. I can imagine how a nice little woman sat up and waited for you, and had a nice warm supper ready for you when you got home. I might go on *ad infinitum*. I really don't know what erroneous statements I have made. I know that roads through a gravelly region do not get muddy. My imagination did not take this fact into consideration. I have now three teams hauling straw to the glass-works. We have hauled 120 loads since Sept. 1. Every load is weighed, and every wagon is weighed after it is unloaded. One who has had no experience has no idea how the weight of a wagon varies, especially in wet

weather. I intend to begin to move my bees out of the bottom Saturday night. Then I shall have some more experience. I want to say right here before I close, that the very best strains of bees that I have in my apiaries are from stock received from Mr. A. I. Root. I like GLEANINGS, and every number is read through from beginning to end, and looked forward to eagerly. A. N. DRAPER.

Upper Alton, Ill., Oct. 8.

[I would say to our readers, that, although this may seem like a hard-set-to controversy, friend Draper and I are on the best of terms; and I am heartily glad that he has picked me up on a number of points, because it gives me opportunity to explain things that might possibly have been misunderstood by others. For instance, I spoke about loading 57 hives on one wagon, and having one team pull the same. Friend Draper has drawn out the fact that we used a heavy Clydesdale team, and that the roads were not muddy, but more of a gravelly nature. It was easy work for them. If some of our readers should try to imitate our example with ordinary farm horses, in muddy roads, with hives overloaded with bees, they might come to grief; but with all the facts before us, there can be no confusion. Another thing: We learn that, instead of being disgusted with fixed frames, he is an admirer of them.]

Why, bless you, friend Draper, we did let the fence down to about two rails high. As there was an overspreading tree right close to the fence, we had to do some crawling over said fence. See? The second time, your imagination very nearly hit the case. You have been just there yourself, I see. I did have a nice warm supper awaiting me; and, best of all, that queen of the household did not worry herself sick for fear I had been kicked or stung to death. You see, she loves those two big horses, and had confidence that they would pull the load and bring us home safe.] E. R.

## FEEDING IN FALL.

### WINTER STORES.

For the last two weeks I have had the very unpleasant task of feeding for winter stores for the bees. For four or five years I have been able to avoid this entirely; but this fall we have had to feed between twelve and fifteen pounds of sugar syrup, with a small proportion of honey in it. I do not know that I am about to give any thing new on this question; but as far as I can remember it is new to me, and it may be to others.

I thought I would try to make strong colonies, and those best able to defend their stores, do the storing in the combs. My object in this was, first, to not excite all the bees—something which I think they are especially apt to do when we commence feeding. Next I thought there would be a lesser liability to waste when ten colonies were fed 100 lbs. than if twenty were fed the same quantity. Again, the stronger colonies could do the ripening better and more quickly. Again, Italians would best defend their stores. So I put or left upper stories on some of the colonies, and fed them sufficiently to whiten out the cells in the upper-story combs; and when they ceased to take down the syrup readily I removed the feeder; and after a few days, given to ripen the syrup, I put these full combs into the upper story in hives that had no honey. I found this work very satisfactory indeed, and I would recommend it to any one from present experience. I preferred colonies having no honey to those having some,

as, in the former, five empty combs can easily be removed; in the latter there is generally more or less honey scattered in every comb, as, owing to circumstances difficult to control, our feeding was very late. I had one or two bricks for every feeder, and placed them above the feeder and in an upper half-story snugly covered over. This helped to keep all warm, and they were changed morning and night.

I should like to see every one bring his favorite feeder to the convention at Albany: then I should like to see a variety of bee-keepers' supplies. As I am away off here in Canada, perhaps I may be permitted to say this without grinding an ax. I look for such a turnout of bee-keepers that I hope to be there.

Brantford, Ont.

R. F. HOLTERMANN.

[I am not certain whether your plan is new or not; but that is of little consequence. There may be times when the strong colonies might be used for storing and ripening honey to advantage. Our plan is to unite and then feed, and we have always had good results, as you may know.]

I do not know whether it is wise or not for supply-dealers to exhibit their wares at the North American. While I think none of us would abuse the privilege, there *might* be a few bee-keepers who think we come to convention just to advertise our goods. I know this is not true in our case. We never carry samples of our goods with us, except occasionally to exhibit some novelty. The chief end of bee-conventions is to get acquainted and compare notes.]

E. R.

### ITALIANS IN ITALY NOT THREE-BANDED.

#### SOME PRETTY STRONG ASSERTIONS.

*Mr. Root:*—In traveling through Ireland, Scotland, England, Belgium, Germany, and Austria, I have seen none but the old straw bee-hive and a few like our old "gums." Here in Italy they have also straw hives, but wooden boxes are the rule. Leaving Lake Como yesterday I was fortunate in reaching this place while an exposition was going on. There is a splendid exhibit of peaches, pears, apples, plums, apricots, nectarines, grapes, etc. Some lemons are eight inches long and four in diameter. The poultry display was fairly good. Our "Rocks" and Wyandottes being on the list. What drew my attention the most was the bee department, which was very poor considering the advancements that have been made. The only improvement upon forty years ago consists in a few bad samples of brood foundation and queen-cages—simple wire boxes—no extractors, no sections, no dovetailed frames, no section-holders, no queen-excluders, no introducing-cages, no wax-extractors, and no surplus arrangements other than the square boxes with side glasses, such as were put over our old box hives. The two largest exhibitors were a retired Catholic priest, and a most agreeable gentleman, whose card I inclose, and of whom I shall write later. The hives that these men had were filled with bees—Italian and Egyptian.

There is an impression in the States that the Italian bee is yellow, or has two or more yellow bands. Now, I do not pretend to be over-bright, but I am a close observer when my attention and interests draw me to a thing; and I assert most emphatically that the belief has no foundation in fact whatever. I have seen Italy from end to end. In the beautiful flowers in these most beautiful gardens; on the luscious grapes in the market and stands, at work on

the buckwheat, of which there is a great deal here, it is everywhere the same old friend, the brown bee. At this exposition the yellow-banded bee ought to be seen, if indigenous. As a matter of fact, among the thirty or forty colonies there is not a bee that can show more than one band. I looked at all the fly-holes for even a "sport" that could show two bands, but in vain. It stands to reason, too, that Italy, not being an island, could not have kept up, all these hundreds of years, a race of bees uncontaminated by its neighbors. Of course, there may be here, as with us, some man who has got these three or more bands by selection; but the native bee has no such marking, nor have I found a single bee-man of the twenty or thirty talked with who knows even of their existence.

All the boxes here are poorly constructed, and the frames heavy and badly put together. The boxes hold 14 frames suspended on wooden rabbets, the frames being 12 inches long and 8 deep, and are nailed together. The honey in Italy is amber-colored, and not to be compared to our clover and linden clear grades. The "idleweis" white honey is a delusion unless the Swiss and Italian-Alpine people catch some before the buckwheat blooms, which is both an early and late crop here, and meets the eye in every direction. We all know what color it imparts. Honey is more commonly used here than with us. On every breakfast table is found the dish of liquid honey. At Carlsbad, Hamburg, and Baden-Baden, when people are put upon a health diet, there is nothing on the breakfast table but a small cup of coffee, one roll (no butter), and a little dish of clear honey.

I should have about 1000 lbs. of comb honey (sections) if our Maryland crop has been good, and am anxious to get home and see what my little workers have done.

ARTHUR T. GOLDSBOROUGH.

Palanza, Lake Maggiore, Italy, Sept. 12.

[Friend G., we are glad indeed to get a report direct from Italy; but we are very much surprised to have you intimate that the honeybees of Italy are not yellow-banded. You certainly must be stating the matter very strongly or else you have not been very thorough in your investigations. D. A. Jones, you will remember, visited Italy expressly to see about the Italian bees. Besides this, an old schoolmate of mine, a most careful and conscientious man, went over to Italy on purpose to investigate this very matter you mention. He brought home a large number of queens from different locations. He said he found a good many bees that would be pronounced common blacks by some people, but that these bees, when filled with honey, and placed on a window, showed distinctly the yellow bands. They were, however, in some cases, so dark as to be of a rather leather color more than golden yellow. The importations that we are receiving constantly from Italy must certainly give us some sort of idea of the bees to be found there.]

A. I. R.

### RAMBLE NO. 46.

#### WITH THE ARTISTS OF CLEVELAND.

Our journey westward from Jamestown was uneventful, except for the little surprises we were constantly meeting. We of the far East hear of smoky Pittsburgh and its iron industry, but we seldom hear of the smaller iron-manufacturing towns. So it was a surprise to us to see nearly every village of importance all through Northeast Ohio, clear up to and including Cleveland, a busy community fashioning iron into useful articles. Cleveland is



largely engaged in the iron industry, as its tall chimneys and smoky aspect will attest.

"Forest City" is what the good people are delighted to call their town; and from our short stop and limited time for observation we should say it is well named. The park on the shores of Lake Erie, Wade Park, and Lake View Cemetery, where the remains of Pres. Garfield rest in the magnificent monument erected to his memory, are all points of beauty and interest to visit.

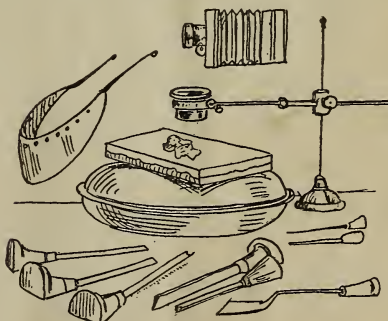
The wood-engraver's material to work upon is Turkey boxwood. No other wood is equal to this in fineness of grain and cutting qualities. The wood mostly comes from Turkey, and round about that part of the world, and is prepared in this country. It comes into the engraver's hands prepared, or put up in different-sized slabs, of type-high thickness, and the wood arranged in such a manner that the engraver's work is done on the end of the grain. The surface is smoothed off, and then whitened.



RAMBLER AT THE ENGRAVING ESTABLISHMENT OF MURRAY & HEISS, CLEVELAND, O.

We did not call in Cleveland to find bee-keepers and look up the honey interests, but merely to pay our compliments to the artist who charms and edifies the readers of GLEANINGS with the etchings and fine engravings we have admired so long on its pages. Mr. Robt. V. Murray, of the firm of Murray & Heiss, we found at No. 204 Superior St. We fortunately found Mr. M. busy at his work. When we see an engraver at his work it seems to be a very simple process; but it requires so much patience, care, and such fine touches, that wood-engraving is considered one of the fine arts, and the artist becomes proficient only after long practice, and never reaches somewhere near the perfection he strives for. Any one having files of the leading magazines or of GLEANINGS for the past few years can see that great progress has been made in the art, and a fine wood-engraved picture of the present can scarcely be distinguished from a steel engraving of former days; and though we are favored with such fine pictures, the end is not yet. As many of the readers of GLEANINGS have never been into an engraver's shop (no, studio), with the editor's and engraver's permission we will give our impressions of the business. In the first place, we wish to say the Rambler is a natural-born artist. He loves pictures; and when the camera can not be used, the pencil is resorted to. Our earliest use of the pencil was a slate pencil, and the pictures that were made on the slate would set the whole school into subdued snickers. They became louder, though, when the artist and his slate were commanded to stand on the floor and exhibit himself and pictures. Though we were never a student of penciling, our sketches are of such a nature as to make an artist weep, and we have no doubt tears come to the eyes of Mr. Murray as he works over our elaborate sketches.

The picture to be engraved is then drawn or photographed upon the surface, and it is ready for further operation. The engraver first puts on his armor—a shield over his eyes, a magnifying-glass to his eye, and, with his graver in hand, he is ready for business. I should have mentioned, that, when the drawing or photograph is on the wood, and all errors corrected, and necessary parts retouched, the whole surface of the block is covered with a thin transparent paper, and the edges firmly beeswaxed to the sides of the block. The engraver then



A KIT OF ENGRAVER'S TOOLS.

takes a portion of the paper away here and there as the work progresses. A whole row of men thus armed, and silently at work in a room, is a very solemn sight, and highly impressive.

The boxwood block and drawing are next placed upon a flat rounding leather pillow filled with sand (the artist, I believe, calls it a swing-pad), in strong or concentrated light,

and the work proceeds. The tools of the engraver are few, and, to the cursory observer, they all look very similar; but they consist of gravers, gouges, chisels, and tint-tools, of all grades of fineness. Machinery for ruling straight mechanical lines is also used. The engraving of a drawing or design is merely touching it up into lights and shadows; but the producing of these shades is where the fineness of touch comes in; and the terms "line stipple" and "cross-hatching" are terms common to the engraver.

In times past the wood engraving was used in the press; but now a cast of the engraving is taken with wax, and a metallic electrototype made, from which thousands of impressions can be made.

All other methods of making engravings are called "process work," or by mechanical means. Under this head comes the production of those half-tone prints, also the cheap, quickly gotten-up outline prints for the daily papers, known as chalk or plaster-Paris engravings. Etchings, such as illustrate these Rambler's letters from time to time, are reproductions by photographic and chemical means of pen-and-ink sketches drawn by Mr. M., every line and dot just as the artist made them, with the only difference that, on the original sketches on paper, they are drawn about twice the size that they appear here. Half-tones are direct from photographs or wash drawings. No matter how fine or how rough the engravings in our papers may be, the reading-matter is much more interesting and lucid than if the cuts were not used. GLEANINGS is truly fortunate in finding an artist who can enter into the spirit of the industry, and give those correct pictures which add to the popularity of the paper. Long may it wave. RAMBLER.

[When we learned of Rambler's proposed visit to the Home of the Honey-bees, and of his trip to California, we particularly requested that he call at the office of our engravers, 204 Superior St., Cleveland. The article above, and the engravings, show that his call was not made in vain. We very frequently receive inquiries as to our engravings—how they are made, and where. Rambler has very faithfully told the whole story. With reference to the picture, Mr. Murray is the one sitting in the arm-chair, with pencil in his hand. He is the artist. Mr. Heiss, the junior member, is the engraver; and Rambler—well, you know who he is; that umbrella and its relation to the hat, those striped pants, all are characteristic. By the way, we notice the picture of an urchin waving the emblems of the engraver's art. We have been querying whether this is one of Rambler's original slate-pencil drawings that caused the school to snicker. Under one of the engraver's desks we notice an ax. Is that for the benefit of unwelcome ramblers, or does it find some other legitimate use? The members of the firm, however, are not dangerous. They are both exceedingly affable and pleasant, and we commend them to bee-keepers and others desiring first-class work, and promptly done. We have no pecuniary interest in the concern; and this free "add," if it may be called such, is made without their suggestion or knowledge.] E. R.

#### CYPRUS; BEES AND BEE-KEEPING.

SOMETHING FROM P. H. BALDENSPERGER.

Only eleven years are past since Jones and Benton left America in search of the Eastern bees, and imported hundreds of the yellow beauties into Europe and America; and now I

should say it is next to impossible to have one single pure Cyprian. Isn't this a curious fact? Many parties have been writing to me to have Cyprian queens; but up to last fall Mr. Benton had the choice; and as I am no queen-breeder I almost always directed to him. Although Cyprus can be reached from Jaffa in 24 hours I never thought it would pay to go there myself; but I wanted a little bit of fresh sea-air. The trip to Cyprus and back was supposed to take four days. Up coast the steamer passes Cæsarea Palestina, mentioned in Acts, where St. Paul was tried before King Herod and Felix, and here he appealed unto Cæsar. Only ruins of bygone beauty mark the place, and a Bosnian colony of Mohammedan emigrants are now building up into a new Cæsarea.

After six hours by sea the steamer anchors in the bay of Acre, at the foot of Mt. Carmel, where a German settlement is flourishing in all but bee-keeping. Some have clay cylinder hives, others box hives, and some Dathe, Dzierzon, and other German hives. They average very little honey, owing to want of pasture in the immediate vicinity of the town of Haifa, and the want of knowledge. Mt. Carmel itself is beautifully covered with melliferous plants, as sages, thymes, and others. In one of the Russian-Jewish refugee colonies on Mt. Carmel one of my scholars is putting up an apiary, after the Langstroth system, our hive, and seems to have done tolerably well.

Going up the coast we passed Tyre and Sidon by night, and morning found us at the foot of Mt. Lebanon. Two days were lost at anchorage at Beyrouth. A gale would not allow the steamer to discharge the goods; and when, on the morning of the third day, we arrived at Larnaca, in Cyprus, the steamer was gone, and I was told that, before a fortnight was over, I could not go back again. What a dull hope, to be walking about a small town, with the prospect of enjoying its crumbled walls and base Cypriotes for a fortnight, while the bees in Palestine are in vain awaiting me to take them to pastures new! I then concluded not to leave home again, at least not in May, across the sea, when work is pressing. How often did I hear about this "abode of the gods"! but the Turks have done their part in destroying nature and art. It is not now to be envied. The position is good; the climate, like all Mediterranean countries, is haunted with fever in the lowlands; but, besides this, locusts have been roaming over the land, and destroying what little green the numerous goats left, which themselves have been gnawing the young growth, preventing, in connection with the Turkish misrule, the restoration to its former charms. The British government is trying to restore the island; but it certainly will be long before the inhabitants will awake from their drowsy nap. And right here friends Jones and Benton first brought American ideas and bar-frame hives; and the only thing I found here was two two-frame nuclei in the house of Mr. Derwishian, a graduate of Benton's school. The day before I arrived, another of Benton's scholars had gathered every movable hive and steered into Egypt to improve the Egyptians, as I understood; but not having seen him I was sorry to find I had come here to go back again without taking even a Cyprian queen with me.

The two two-frame nuclei at Mr. Derwishian's were as cross as cross can be. Smokers and veils of enormous sizes availed nothing. I never saw such a bad lot, even in Palestine, except when the camels had upset quite a number of hives, and they were pitching at us in fury. Mr. D. attributed this behavior to Mr. S. G.'s rough handling the day before, or three days before. Mr. D. insisted on working them



without smoke, which was just the right thing to keep us at a distance, and I could not enjoy the pleasure of seeing the queen. Since I came back the queens have mated, and I received one here which is developing nicely, with very nervous bees. Mr. D. has sold all his bees to Mr. L., who started with them to Egypt, and he himself will leave the island, thus leaving nobody to care for Cyprian queens or bar-frame hives. He had a beautiful arrangement for silkworm raising. The moths were actively engaged laying eggs, while he had a nice white funnel through which the eggs were dropping into little sacks. Mr. D. pretends to have a method of raising healthy insects, peculiar to himself, and tries to beat the French market. He will not divulge his secret, but keeps it to himself. He has dropped bee-keeping altogether, as he does not believe in returns from this business. It certainly is a poor place for honey; and as he could not depend upon queen sales, from different causes, he has made up his mind to give up bees which give no honey, and the island altogether, as the climate has ruined his health and the islanders his feelings. He had given a man a few hives a year ago; and when he invited me to take a look at them, the superstitious Cypriote objected, fearing the effect of the evil eye. After demonstrations, dickerings, and threatenings the man at length gave way, and we proceeded to the clay-cylinder apiary.

Jaffa, Syria, Oct., 1891.

*To be continued.*

### BEE-PARALYSIS.

#### MORE PROOF OF THE SALT CURE.

*Editor Gleanings:*—In a recent issue of your journal you request those having had experience with the new bee-disease, and the use of salt as a remedy for it, to report their success. In '89 we had two colonies affected. We changed queens, which seemed for a time to mend matters; but in the spring of 1890 these same two, and five other stocks, were badly diseased. Not knowing what to do we left them alone. Having young and prolific queens they managed to exist through the summer and winter following; but when spring opened again, and the bees could fly out, we found 24 colonies very sick. Their alighting-boards were covered with dead and dying bees. They were black and shiny and trembling, seeming to suffer very much. We felt now that something had to be done or we should have to give up the business; so we concluded to try the salt cure, recommended by the editor of the *American Apiculturist*. We promptly mixed enough in the right proportion to doctor the whole 24 stocks. I used it twice in three or four hives worst affected. It was not more than two days afterward when we noticed a change, and in a week they were apparently well — building up remarkably strong, and remaining healthy all summer. Half of our apiary was not affected, to our knowledge. These we moved out of their hives into hives washed with salt water; and in this way we prepared hives for new swarms. It is a simple remedy, yet not to be despised. We must not reject the small things of the earth. I know very little of the science of the disease; but I do know that, unless something had helped, our harvest of honey would have been far worse than it has been this year; and I do hope that this simple remedy may be as effectual elsewhere and hereafter with us, if we should ever have such an awful death-rate among our bees again.

Mrs. MILTON COXE.

Kansas City, Mo., Oct. 12.

[You have given valuable testimony. Come to think of it, we haven't had a case of bee-paralysis in our home yard since we have kept down the grass at the entrances of the hives with salt. At our out-yard, where we used no salt at the entrances, we had two cases of bee-paralysis. These facts are significant.]

#### BEE-PARALYSIS; SALT CURE SURE AND EFFECTIVE.

I notice in Oct. 15th *GLEANINGS* several items referring to the sodium remedy as a cure for bee-paralysis; and from observation and various reports from different sections I see that this disease is becoming general, and, if not checked, may eventually become fatal, similar to foul brood. Some three years ago this fall I got a queen from you, and the following season her progeny were, as nearly as I could judge, black, shiny, and, as I thought, the most peculiarly marked bees that I ever saw; and not having had any experience with what was then called the nameless disease I began to mistrust, from what I had read in the different journals, that I had in my apiary the above disease, or a new strain of bees, and at once I sent you a few of the bees, and requested your judgment as to what kind they were. I gave a full statement as to the bees. Perhaps E. R. may remember the above, as I believe you were on your California trip at the time. However, I received a report stating that the bees resembled bees that had the above disease; also that they indicated robber bees; also referring me to the sodium (salt) as a cure. I at once prepared some and sprayed these bees, and all other colonies that I had, once a week, with moderately strong salt brine. The following season I had none of those shiny, hairless, varnished bees. I continued the salt spraying once a week during the early spring till October, and I am ready to challenge all beedom to show up more hearty, bright, and beautiful bees, both imported and American stock; and from my experience along this line I would advise all apiarists to use the salt spraying once a week, and the bee-paralysis will be known only in the past. J. A. GOLDEN.

Reinersville, O., Oct. 20.

[We do not remember, friend G., the circumstance of writing to you, but we presume we did. As to the salt remedy, you must have got this from some other source, because at that time we did not know of its use for this disease. Now we have plenty of testimony to the effect that salt is an effectual cure. Are there any who have tried it and found it to fail? We do not wish to take up very much more space, but we wish to get the truth pro or con. The idea of salt curing bee-paralysis, in the language of the school girl, seems too ridiculous for any thing; but if any one had told us that chloride of sodium would be a sure cure, we should have believed it at once.]

E. R.

#### A REAL LETTER FROM HELEN KELLER HERSELF.

SHE SENDS KIND WORDS TO UNCLE AMOS AND TO THE HOME OF THE HONEY-BEES.

TUSCUMBIA, ALABAMA, Oct. 14, 1891.

*My Dear Mr. Root:*

I hope you will excuse me for not answering your kind letters before, and I think you will, when I tell you that I have a great many letters to write during school-time, and my friends do not like to have me write in vacation; for you see I can not help getting tired sometimes. But I was very glad indeed to get your letters, and very grateful for the money that you sent

to help educate poor little Tommy. I was sure that if good people knew of Tommy's sad needs they would wish to have his life made as bright and helpful as possible; and it is very beautiful to see how quickly and lovingly people everywhere took the little stranger into their hearts. My friends in Boston write to me that his mind is still in darkness but I am sure that God's beautiful light will banish the darkness just as night hastens away when the sun appears.

I certainly hope that I shall have the pleasure of seeing (for even little blind girls can see, in some wonderful way that I call seeing, with my mind) Uncle Amos some time. Then he will see what a wonderful, faithful servant the dear God has made the hand. I can tell my friends as soon as I touch them, and I can do almost every thing that girls who can see and hear do, because I have the dearest teacher in all the world, and the sharpest eyes imaginable in the tips of my fingers, and sometimes teacher says I ought to see more than others because I have ten eyes, but that is only fun. How I should love to visit the Home of the Honey-bees! I have learned a great deal about the busy little workers, and once I wrote a little story for teacher's birthday and told about the different kinds of bees and their work. I am very fond of animals and like to learn all I can about them. I have a funny little donkey, a beautiful pony, and a great dog and a little canary. Besides these pets I have the loveliest golden-haired little sister, and the softest, plumpest baby brother you ever saw. They are named Mildred and Phillips Brooks. Bishop Brooks is one of my dear friends, and I named little brother for him. I have been to Ohio several times and I have dear friends in Cincinnati and Columbus and Van Wert. But I do not know whether Medina is near any of these places or not. I hope when you write to my dear friend Mr. Goodhue you will give him my love, and tell him I am going to write him a long letter soon. Now I must say good-bye. Give my kind love to all my friends at the Home of the Honey-bees. From your little friend,

HELEN A. KELLER.

[Many thanks to you, dear little friend, for the pains you have taken to write me such a good long letter. Medina is very much nearer to Cleveland than it is to Columbus or Cincinnati. It is on the crossing of two railroads, and these roads touch our premises; so the Home of the Honey-bees is right in the north-west corner made by the crossing. One of the roads, the one going north and south, is named the Cleveland, Lorain & Wheeling, and this one communicates directly with Cleveland, which is only 30 miles away. The other road, east and west, is the Pittsburg, Akron & Western; but at the present time its eastern terminus is Akron, 20 miles east of here. I mention this that it may enable you or any of the other friends to reach us easily.

You speak of poor Tommy as being still in darkness. I suppose that means that he can not yet read and write so as to talk with his friends, as it were, and learn all about this beautiful world which God has given us. I have faith as you have, dear Helen; and let us pray for him that God may brighten his intellect, and help his teachers to reach out after him in the same way they reached out for you.

And now, dear Helen, there is one thing I feel very anxious to have you tell us; and that is, what were your feelings before your teachers reached you? What did this world seem to you like then? and in your thoughts did you have any conception of the great God who gave you being, and who gave you a place here among us? I do not ask this question from idle curi-

osity, and very likely you may find it difficult to answer it at all. But I have long had a sort of faith or belief that God would make himself known to his children in some way, even though, perhaps, in a very indistinct way, when they, like you, were cut off from communication with their fellow-men. You see such cases are very rare where one lives to be as old as you did without being taught more or less of God. From what I know of you I should conclude that, with your bright happy disposition, and keen vigorous intellect, there would have been *faith* that some time or other you were to come out of this darkness; and this faith would account in a great measure for the readiness with which you were reached and rescued. Did you begin to recognize that you were not as other people? I have not been able to learn just how old you were at the time of your emancipation; but I believe you were old enough so you could remember and tell us something about it. Will you forgive your good friend Uncle Amos for being so inquisitive, and for calling up or recalling a portion of your life that may be painful to you? How wonderful and strange it is that God has seen fit to intrust this great work to us, of teaching his children! yes, the work of teaching all mankind of Him who came to earth to be a savior for us all! Good-bye, dear little friend; and accept our thanks again for your excellent letter.

I may say to our readers that we publish the letter without any change whatever in the general arrangement, spelling, or punctuation.]

#### HOW WE PUNISHED THE ROBBERS.

##### WETTING 'EM DOWN WITH THE FORCE-PUMP.

The other day we asked one of our students to feed a few late colonies of bees that had not gathered quite enough to carry them through the winter, and there was danger of robbing. We thought we had better put the feeder on at night, so that they might have it taken down before morning. We think our instructions were carried out fairly well with one exception. When turning the syrup in the feeder, a little was allowed to drip down the side of the hive. This, of course, attracted the bees early in the morning; and as three hives had been served in this way, it was astonishing to see how quickly the bees commenced robbing; in fact, the center hive of the three was literally covered with bees, and we immediately set it in a tent covered with mosquito-bar. The other two had perhaps three or four quarts of robber bees around each hive, and they had almost become masters of the situation, in spite of the determination of the colony to prevent the robbers from getting in. The force-pump was then brought into requisition, and the thousands that were flying about the hive were soon sprinkled, as well as those that were trying to get in. After allowing a fine spray to rain on them a few minutes, the entrance became somewhat cleared of the robber bees on the two hives that were not covered with the tent. We then placed a little brush over the entrance of each hive, and covered it quickly with wet grass, and put long wet grass on top of the hive, allowing it to hang down all around, laying a weight in the center to hold the grass from slipping off. A little cold water soon discouraged them from attempting to rob these two hives any more. The rush, however, that was made for the tent when they could not get through the mosquito-bar was astonishing. They managed to gain an entrance by alighting on the ground and crawling under the netting. In this way nearly a bushel of bees got around the



hive, while we were protecting the two other hives with grass and water. We then brought the spray to bear on these bees inside the tent, and in a short time we had them thoroughly drenched. There was an immense number of bees around trying to get in, so we just raised the cloth a little way from the ground, and allowed as many of the robbers as possible to rush in. In this way all the robbers in the yard were admitted under the tent; and as they flew up and alighted on the cloth inside, which was literally covered with them, we drenched them thoroughly with the cold water. This caused them to tumble down and crawl out on the ground; and as soon as the sun dried them sufficiently they flew back to their hives. In this way we caught all the robbers, and gave them a thoroughly good soaking, and, to our astonishment, after the tent was once set over the hive and a little spraying done, few if any more bees got into the hive; in fact, the inmates seemed to be quite able to protect the entrance, and did so; the result being that the robbers, instead of getting into the hive, were simply caught on the inside of the tent, where they were held until we gave them a thorough soaking. Now, the point is this: Do not leave the mosquito-netting down on the ground, but keep it sufficiently raised so that the robbers will go under. Have your force-pump and cold water ready; and every time you get a fresh lot inside, give them a spraying.—*Canadian Bee Journal*.

### THE HOME OF THE HONEY-BEES AND ITS WORKING FORCE.

A COMMUNICATION WRITTEN BY ONE OF THEM.

The following was handed me by one of our boys. Perhaps I might say, by way of explanation, that it comes from one who receives only moderate wages. It was both a surprise and a rebuke to me, for I had but little idea that he felt toward his employer as he expresses himself. Trusting that it may prove useful to those of our readers who hire hands as well as to those who work for wages, I give it entire as it was submitted to me.

My friends, do we ever stop for one moment to think of the blessings that surround us as helpers at the Home of the Honey-bees? Do we realize that we are blessed above others in things almost too numerous to mention? In our daily labors we are given almost unlimited freedom; we come and go without having any exact and stated time set; and if we are not there at whistle time, no high fence with bolted door stands before us, and obliges us to go away; but we are allowed the privilege of keeping our own time. And, friends, how careful we should be in giving good, big, well-rounded, honest hours! for if each one of us should lose ten minutes every day it would be over 1000 minutes, or over 16 hours; and at the price of 12½ cents per hour it would be \$2.00 every day; and for a year—why! it would soon be enough to buy a farm. Friends, let us be careful. We are not ground down and kept under the hammer by a harsh and cruel employer who seeks to get all out of us he can, but are looked upon as men and women. Who ever heard of a strike or any disturbance at the Home of the Honey-bees? Who ever heard of wages being reduced, and harsh methods resorted to? What a wonderful thing it is! Our temporal as well as our spiritual welfare is looked after, and every day we may hear the

word of God read at the noon services, the voice in prayer, and sweet songs sung; and, friends, can't we make this institution one of the grandest and most useful instruments for doing good? and let there shine from every door and window a spirit of love and goodness. We shall feel better, be better, make better helpers, better men and women, and make the world better for having lived in it; and the Home of the Honey-bees will be known the world over as a God-fearing institution, and other shops and factories will try the example.

What beautiful scenes are all about us—blooming gardens teeming with vegetable life; giant windmills pumping the cool and refreshing waters from the earth; pleasant walks and drives along shady avenues; beautiful evergreens and vineyards shading the homes of the busy little bee, while all around is peace and quietness; and while there is great activity and business, and goods are being shipped by the carload, yet there are no checks, no drawbacks, every thing being done by willing helpers. The air is not polluted by profanity and tobacco smoke; and, friends, while we may be away five or ten miles, while we are away, don't think we can smoke and do things we would not do at the shop. God sees us, even if our employer does not. We are doing wrong, and deceiving ourselves. Look out; be careful. What beautiful lessons we can learn every day scattered all around us! And now let us do the tasks that are set before us, with cheerfulness and alacrity, thankful that our lines are cast in such pleasant places, amid such healthful surroundings, looking to the best interests of the Home of the Honey-bees; and last, but not least, we are handed out every Saturday night a fair and reasonable compensation for our services, not grudgingly, but with a kind and loving spirit. And, friends, how many hours and perhaps sleepless nights have been spent by those who are in charge, planning and thinking to find work for all of us to do! Are we thoughtful? do we strive to please? do we do our work well? are we willing to do unpleasant and disagreeable things? All hail to the Home of the Honey-bees!

A HELPER.

### THE HOFFMAN FRAME.

A FIXED FRAME THAT HANGS IN NOTCHED RABBETS PREFERRED.

*Mr. Editor:*—I have been much interested in the discussions on the fixed-frame question. I have had the fortune, or misfortune, to have in my yard four or five different kinds of frames at the same time. This, while being a disadvantage in many ways, has given me a good opportunity to judge of the merits of the different frames.

The Hoffman frame, which was of the number, had the preference until I began manipulating them in the spring. The dampness of the cellar had so swelled the frames that it was with difficulty I could remove them at all. I complained of this to Mr. Whitmore, of whom I had secured the hives. He assured me that they would work better when they became dry. So they did; but still they did not work easily. Then, to add the delay and inconvenience of turning the screws, prying the frames apart, and the necessary pains to prevent crushing bees, they were a very objectionable frame—especially when the wire-end frame, similar to the one mentioned by Mr. B. Taylor, in GLEANINGS for Sept. 15th, stood by their side and could be moved instantly without turning screws, prying out frames, or crushing bees. This frame has nearly every advantage of the Hoffman, with none of its disadvantages, and,

at the same time, every advantage of a loose frame. It hangs on a single wire nail driven into each end of the top-bar. The nails rest in shallow notches in the edge of a strip of tin nailed on the inside of the hive, projecting a little above the bottom of the rabbet, and extend to the sides of the rabbet to prevent longitudinal motion. There should be staples along the sides, and toward the bottom of the hive to hold the bottom of the frame in position. There is absolutely no chance for the bees to glue the frame fast. A hive with these frames can be tipped to any position except bottom up, and I have moved them miles on the same wagon with the Hoffman, with as good results. This is the frame for me, and I shall eliminate all others as rapidly as possible.

In the footnote to Mr. Taylor's article I notice that "all spacing-devices in the rabbet have been unpopular;" and the reason given is, that you roll the bees over and over unless two or three frames are first moved. I have experienced no more difficulty in this way with this frame than with the other, and can see no good reason for its unpopularity. I have no crow to pick in this matter, but am anxious that the brethren should have the advantage of the cheapest, handiest, and best.

Etna, Minn., Oct. 12.

W. A. BOYNTON.

[If your Hoffman frames swelled so as to stick in the spring, they could not have been made as Mr. Hoffman makes his. As he uses them, they can not possibly do so; hence I conclude you use something a little different. Of course, the bees could not stick with propolis your preferred frame in notched rabbets; but such a frame destroys the function of lateral movement; and I am sure that, with some hybrids, you would anger them very much more by pulling the frames out. At the present writing I know of but three bee-keepers who use fixed frames in notched rabbets, and they have used them for only a season or two. But I do know that several who tried the plan abandoned it. With shallow frames, however, I have no doubt it will work, and possibly that is what you are using. But with a deep frame, or with a frame as deep as the Langstroth, it must of necessity roll bees over more or less when the colony is strong, maiming a good many, if not killing them.]

E. R.

## THE HOME OF THE HONEY-BEES.

ITS SIZE AND GROWTH.—BY E. R. ROOT.

If you were to get upon an eminence a couple of hundred yards north and east of the Home of the Honey-bees you might see something very much like what is shown in the accompanying engraving. But we have no great hills or mountains in our vicinity; so in order to get any good view of our bee-plant we have for some little time cherished the scheme of elevating a Kodak by means of a kite or balloon, and then at the proper time pull the string and press the button. But the scheme never materialized beyond the building of a mammoth kite by a couple of nephews; and although it swung aloft majestic and like a thing of life we did not dare to trust our Kodak to its tender care. Accordingly our special artist, Mr. Murray, elevated himself in imagination; and what he saw is depicted here, we think, without exaggeration.

We really do not wish people to think we are bigger than we are; and if they have any such idea, let them come and see for themselves. Almost every week we are receiving visits from bee-keepers from all over the land; and they

have generally expressed surprise that we have so large a plant, and every thing equipped so perfectly. They had not imagined that we had so many large permanent brick buildings. In fact, it seemed inconceivable that so much ado could be made about the busy little bee. With the exception of our warehouse, shown at the upper left-hand corner of the picture, the large buildings are all built of brick—one of them being fire-proof, and all equipped with automatic Grinnell fire-sprinklers, the use of which we have before explained. To add further to our security in the way of fire protection, we put in, in 1891, a mammoth steam fire-pump, 12x7x14, of a capacity equal to two ordinary city fire-engines. To this is attached, at various distances, some six hydrant stations, with 500 feet of 2½-inch hose—all ready for instant service, night and day. The entire establishment is lighted at night by a complete Brush incandescent electric-light plant. This finds service in the manufacturing departments toward evening during the short winter days and at other times when we are obliged to run nights. The entire bee-plant, exclusive of horticultural interests, covers an area of five acres; and this whole amount, with some minor exceptions, is devoted exclusively to the little honey-bee in some form or other. If you were to put all of the larger buildings in a row, end to end, their length would aggregate 500 feet, to say nothing of the small structures and lumber-sheds scattered here and there, and the large bank barn. As all of these buildings are two-story and basement, the floor space, to the width of about 40 feet on an average, would reach 1500 feet, or nearly one-fourth of a mile.

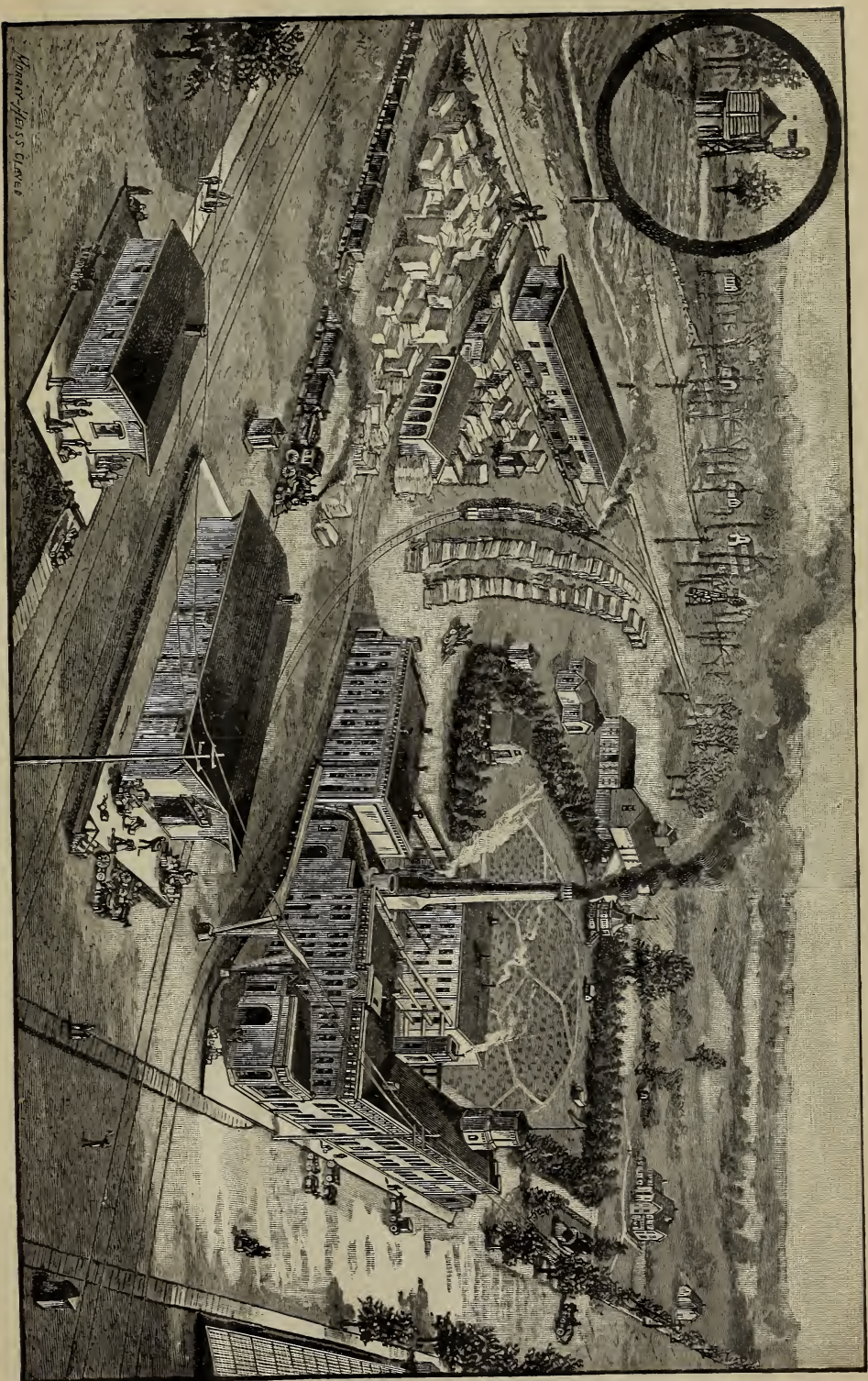
The question may be asked, "What is the secret of this enormous growth, from one building 40 x 100, in 1878, to five such buildings in 1891, to say nothing of the smaller ones scattered here and there, not to mention the large freight depot put up by the railroad company just opposite our works, very largely because our extensive shipments demanded temporary storage until the next freight could pull them out?"

Few people have any idea of the amount of advertising that we do. While our cards appear in some of the largest agricultural papers in the country, this is only a small part of our real advertising. We send out annually 100,000 52-page catalogues to new and old customers, and the aggregate expense of this amounts to some \$3000. Add to this about \$1200 for outside advertising, and it makes a total of over \$4000, exclusive of the indirect advertising through our own journal. But advertising alone will not build up a permanent business. There must be good goods back of it, so that, when a customer buys once, if he needs any more he will be likely to buy again at the same place. Once or twice during extraordinary seasons we have been obliged to send out inferior goods, on account of the rush of the season, and the customers must have something. We hope we shall never be caught that way again; for it is not profitable to make rebates afterward.

It will be impossible to enter into details in regard to all the departments, though we may touch upon some of the later improvements and additions. The old main building shown in front will be recognized as the one that has appeared in our A B C of Bee Culture. In 1889 we erected a 90-foot brick stack. For one-third of its height it is square; for one-third more it is octagon, then it terminates in a round shaft. It is 8 feet square at the base, and tapers gradually to the top. The flue inside is round, and 40 inches in diameter.

In 1889 another boiler was added, making our boiler capacity equal to 120 horse-power, and yet it is hardly adequate. One of the latest im-





Honey-Bee's Club

THE HOME OF THE HONEY-BEE IN 1891.



proved Buckeye engines, of a capacity of 125 horse-power, runs the wood-working establishment just below the boiler-room. Three other engines help to make up the equipment; viz., one 10-horse-power for the machine-shop, and another 10-horse-power for the wax-room, dynamo, and an elevator, and a 7-horse-power for the press and printing departments. Three freight elevators—one in the wood-working building, one in the main building, and one in the warehouse, take the freight up to the various floors. Overhead runways connect the main building with the wood-working building and machine and tin shop. This latter is fire-proof, brick, equipped with the Grinnell sprinklers, the same as the others. It is 36 x 98, two stories and basement. This was put up in 1890. It is in this building that all the metal work is done, such as making extractors, feeders, tin rabbets, wax-extractors, perforated zinc, saw-mandrels, and all sorts of wood-working machinery, foundation-mills, and every thing else that the use of the little bee can demand in metal.

Several Smead odorless water-closets are situated at convenient points on our bee-plant.

In 1891 an east and west railroad was put right through our premises, and so we now have two roads—an east and west as well as a north and south. Some of our customers, no doubt, have noticed a reduction in their freight bills—a fact due to competition, that life of all trade. Right alongside of the east and west road we erected, during the past summer, a building 48 x 96, two story and basement, of wood. This is designed for storing made-up goods, and it is intended to receive the work turned out during our dull season. Heretofore our storage room has been very much cramped, with the result that we could not make up ahead very many goods for the following season's use. The severe lessons we have learned in getting behind during the busy season, and the consequent necessity of running nights, putting on green hands, with the inevitable result of poorer workmanship, has forced us to the construction of this latter building. In addition we have bought enough lumber to last us anywhere from one to two years ahead. This lumber is stored in our own yards and in Michigan, awaiting our call. Instead of being obliged to use lumber not properly seasoned, we now have a stock of the very best of dry lumber. This, together with our storage building, we hope will enable us to make prompt shipments, even of carloads. You see cars on our switch standing in front of the warehouse. All that is necessary is to truck the goods, already boxed, on to the car, to be pulled out by the next freight. Almost all of our goods can be loaded on our platforms. Small shipments are trucked across the draw-bridge, shown in front of the main building, to the freight depot.

The small evergreens that were set out, surrounding the apiary, have now grown to an average height of 20 feet, and their limbs branch out past each other so much that it is now quite difficult to pass between the trees. When they have a few years' more growth, and their tops have been lopped off, as a windbreak they will be complete. In fact, even now, on a cold, piercing, wintry day, the protection which they afford inside of the inclosure is very apparent. We have never yet had 500 colonies in the home apiary—not even nuclei. So many in one locality where they can not possibly support themselves are pretty apt to get into mischief with each other, unless eternal vigilance is exercised during the hours of bee-flight. We do not usually have more than 200 or 300—rarely this latter figure—in the home yard at a time, the extra number being put into an out-apiary. This out-yard is used as a sort of reserve, both

to store honey and to supply bees, when necessary, to the home yard.

We find, by looking on our books, that we have sent out, during the past season, over 2000 queens. Besides that, we sent out from our own apiary alone nearly 400 nuclei. Of course, it would be impossible to rear all of these queens ourselves. Accordingly, we have to draw on one or more apiaries in the South, besides some from the apiaries of Neighbor H. and friend Rice. These yards are situated anywhere from three to twelve miles from our home apiary.

## EXPERIMENTS.

### DO WORKER BEES LIVE MORE THAN 45 DAYS, UNDER NORMAL CONDITIONS?

It was with intense interest that I read Bro. France's article on page 760 of Oct. 1st GLEANINGS; not particularly because Bro. France was trying to disprove some of the things which I have written, but because he has brought out something new for us to think about. May it not yet be possible that we can make individual worker bees live a year by throwing the colony into an abnormal condition? All of my experiments have been with colonies in a normal condition; or, in other words, with colonies that have their "own sweet will" just as they would have it were they in their home in the hollow tree in the woods. I never had a doubt but that bees could be compelled to do many things which they do not usually do by throwing them out of balance, as it were. Huber threw his colony out of balance by confining them to the hive, and so proved that it took 20 pounds of honey to produce one pound of wax; but nearly all of the present day do not consider this just a fair experiment; and, if I am correct, none now believe that it takes that amount of honey in "our every-day" bee-keeping to produce a pound of comb. Again, some one has proven that, by allowing none but young bees in a hive, bees go into the field to labor when three or four days old; but all who are at all observing know that, in the production of honey "with the least amount of capital and labor," bees do not go into the field as laborers in their "childish moments." Now, like Bro. F., Doolittle has been experimenting to see if he has been wrong in the assertions which he has made for a number of years, that "bees, when in a normal condition, do not live more than 45 days," and here is the history of those experiments:

July 9th I went to my out-apiary, five miles distant, and there shook into a box  $2\frac{1}{2}$  lbs. of young, poorly marked hybrid bees. I brought them home to my own apiary, and set them a little distance away from the other bees, after having first introduced to them one of the queens which give bees so yellow that they look when flying at the entrance like lumps of gold. In this lot of bees there were hundreds which had only just crawled out of their cells, and those probably not more than from three minutes to an hour old, for I took pains to secure all the young bees possible. On the morning of July 10, three frames of brood from this queen which was introduced to the box of bees were put into a hive and set away from the rest of the bees as above, and the swarm made as above given hived from the box in this hive, which also contained two empty combs and the rest of the hive filled out with frames having starters of foundation in them. As the three frames of brood had many cells from which bees were hatching, I watched the hive closely to see when the first "lump of gold" would



take wing, for, according to those who have bees go to the field young, these lumps of gold should be astir as soon as the 14th or 15th, but neither of these days showed any signs of aught but hybrid bees. On the 16th, at about two o'clock, I saw the first out for a playspell; and each pleasant afternoon thereafter more and more were out, but not one of these yellow ones showed herself at any other time of day till the 26th, when the first yellow bees were seen coming in with loads of pollen and honey during the forenoon. So far I had the same proof I had in my other experiments, that, when there were plenty of field laborers in a colony, bees do not go out into the fields as laborers till they are 16 days old. I now watched with more than usual interest, as the 20th to the 23th of August came on apace, to see the field bees go out and in at the entrance to this hive; for if I had been right in the past with the 23d of August at 10 A. M., none of the hybrid bees should be left. August 22d a very few hybrid bees were seen going out and in at the entrance, perhaps one in three or four minutes; but August 23 none were seen, and on the next day the hive was opened and carefully looked through without finding a single hybrid bee in it.

Now, the question which arises is. Would there have been any difference had these bees been Carniolans? I do not think so, for, with the Carniolans which I have had at three different times, they have not proved any longer lived than other bees, and I have had Carniolan bees from a queen from the same source Bro. F. says his were from. Then, if the above conclusion is correct, we see that the long life which Bro. F. secured for his bees came from throwing the colony into an abnormal condition, or else young bees from other colonies kept the population good. I am glad he is to experiment further, to tell us which of these is correct. One thing I do not understand about that colony of his, unless young bees from other colonies did go to it. He says he "hived a good fair-sized swarm" in his experiments; and I think that it is Professor Cook who defines a "fair-sized swarm" as consisting of about 20,000 bees. Bro. F. then goes on to tell us how this fair-sized swarm of bees occupied and filled with brood and honey a three-story hive, so that he had to take away all of the combs out of these three stories in order to get all the brood away, as they had brood in all the combs forty days after they were hived. If not a single bee had died up to this time, they occupied more room than I should expect a good fair-sized colony to occupy which had had no accessions to its number in 40 days.

Now just a word about secreting wax. Bro. F. asks whether the bees in my observatory hive were building comb or not. Most certainly. Bees always build comb in a honey-flow. Does not Bro. F. know that? You can not have a honey-flow without the bees secreting wax, all talk to the contrary notwithstanding. When a honey-flow begins, what do we see? The cells of the combs already built lengthened out with new wax, which delights the heart of the bee-keeper; next the cells of honey capped over, burr-combs built, etc., and Prof. Cook tells us that even bees on the clover-blossoms have the wax scales on them (I quote from memory). But my time is up. Don't shut down on us yet, Bro. Root, for out of these friendly discussions and experiments much good may come.

Borodino. N. Y., Oct. 16. G. M. DOOLITTLE.

[Doolittle is a pretty careful observer, and on general grounds it is not wise to disagree with him; but there is just one point on which my observation differs. I will admit that the *average* worker bee, during the busy season,

dies inside of 45 days; but I can not quite think that they *all* do. Nearly every spring we have been obliged to buy up colonies, and some would be hybrids. Although these latter would be requeneed early in May, I have often observed the presence of quite a number of the original hybrid bees, even to the latter part of August. This would make more than 90 days, and these colonies were remote from other hybrids too. The reason why I have observed the fact is because we do not dare to send out to our customers nuclei containing any impure bees. Two or three times we have been very much annoyed to find, in a colony from which we had intended to fill an order, some four months after an Italian queen had been introduced, too many hybrid bees. We have once or twice sent bees to Australia in a mailing-cage, and these bees were on the road anywhere from 38 to 42 days. It seems to me that, if bees will live this long, jostled about in the mails, with no opportunity for flight, they ought to be able, a few of them, to survive 90 days or longer, with freedom to fly, even when subjected to the toils of the season. Now, it is possible that I have not understood Mr. Doolittle; but I am very sure I have observed, for several different seasons, Italianized hybrid colonies that would show their hybrid blood for three months, and longer, after the Italian queen had been introduced.

Hello! here is something from that keen observer Emerson E. Hasty, who, as our older readers may remember, used to delight us so much by his bright spicy writings. What he has to say, though, doesn't materially strengthen my position. He suggests a rather new idea.] E. R.

#### SOME SUGGESTIONS FROM FRIEND HASTY.

A very valuable and interesting experiment is that which comrade France gives on page 760, Oct. 1st. Of course, it must be repeated by others, as well as in his own apiary. Besides the possibility he speaks of—a multitude of young bees joining in individually from day to day, there is the further possibility of a small wandering swarm entering some time when the keeper is not by. This last danger will beset his isolated colony as well as the one in the midst of the apiary.

We have heard of the witness who testified to the truth, the whole truth, and *more* than the truth; and what puzzles Mr. France and the rest of us is, that this comb-building colony looks, at first sight, like a witness of that sort. It proves that old bees build comb; and then it goes to work and proves so much more that we are all thrown to the ground. I write in the attempt to solve the riddle.

In the first place, is it probable that the army of careful observers, who have decided that the bee's life during the highest stage of activity is only six weeks, or a little over—is it probable that this truth-seeking host have all been mistaken—and so far mistaken as the difference between 45 days and 90 days? No, that is not at all probable. Yet I do not take the opposite horn of the dilemma. I don't believe any swarm entered unseen, or that any significant number of young bees joined individually. My solution runs thus:

Edwin France uses a very large frame and hive; and I guess the swarm was what some of us would call "a monster." He naturally calls it a "fair-sized swarm" because he sometimes has much larger ones. In the next experiment, friend F., weigh your swarm. Not very long after the colony was hived, the honey-flow ceased. At this time about half the colony, I conjecture, "laid themselves out" to go

through the winter and work out their six weeks of active scratching around, next spring. In other words, they entered the semi-dormant state, in which time counts nothing, or next to nothing on the calendar of bee-life. This is just what *whole colonies* do in many localities where honey totally ceases early in the season. The only peculiarity in this case was, that half the colony were eagerly at work, while the other half didn't care whether school kept or not. But the work went on just as in February the work of, say, one-tenth of the colony goes on while the others are idle. The workers actually engaged in constant labor wore their lives out, and died in regulation time. Then, when there was pressing need of more laborers, some of the semi-dormant ones, like good patriotic citizens, volunteered to help. Thus they kept on doing as need required, till all had passed back again into the active state. So the *colony* built comb for 90 days; but no individual bee secreted wax for so much as half that time.

Richards, O., Oct. 9.

E. E. HASTY.

### HEALTH VERSUS DRUGS.

#### SOMETHING ON THE OTHER SIDE.

**A. I. Root:**— Having read with much interest in the October 1st issue of GLEANINGS of your painful experience while sick, I am moved to write this letter with a view, if possible, of preventing much suffering that undoubtedly would follow a too hasty adoption, by numerous readers, of certain views expressed in your well-meaning sermon. As you declare yourself as no longer belonging to that class of people who "know it all," you doubtless will be open to new truths presented by the other side of the question, and by one who in their expression has only the welfare of humanity at heart. May I therefore say a few words in opposition to the use of drugs?

Having had a severe attack of typhoid fever some years ago, and having been attended by an allopathic physician, I am able to appreciate most of the queer sensations you so graphically describe in writing of your sickness, and, to some extent, to speak advisedly on the subject of drugs and their effects. It is not my intention to criticize or compare the various schools of medicine, but, if possible, to save you and others much unnecessary suffering. This I shall endeavor to do by turning your attention toward the natural means which Nature has provided to keep us in good health, and, when sick, to cure us; in other words, to trust Nature more and drugs, etc., less.

Like yourself, when sick I came, after a time, to have implicit confidence in the healing power of the doctor and his army of drugs, and never a suspicion crossed my mind but that it was due entirely to them that I was able, after some two months' confinement to my bed, to get up—a mere shadow of my former self, however. Since that time I have made all matters pertaining to health a special study, from all points of view, with the result that my confidence in doctors and drugs has been dispelled as completely as I have come to recognize the fact that health is obtainable only by obedience to Nature's laws. The doctor may give us some temporary relief, it is true, by suppressing some symptom, which, after all, is but the cry of Nature warning us that we are doing or have done wrong, and which is the evidence that she is endeavoring to remedy the evil for us. Medicine, however, as now practiced generally, is unable to restore health or cure disease. This is a fact admitted by numerous leading lights of the profession who have

the candor to speak the truth. By the use of poisons, Nature's efforts can be diverted from her own wise work of expelling disease, in order that she may cope with the new enemy thrust in upon her. This is the effect that is called, or mistaken for cure; but our wise mother as surely returns to the completion of her unfinished work, perhaps in another manner, and it is well to remember that each time she is thwarted her work becomes more difficult. Fevers are not cured by quinine; Nature's sweet restorer can not be replaced by recourse to *bromide of potassium*, chloral, or any other poisonous drug. A great many diseases are self-limited, and run their natural course, whether interfered with by the doctor or not; and it is in the ineffectual attempts in such cases to "break up" the fever that so many lives are sacrificed. If the patient recovers it is in spite of the doctor and drugs, not because of their interference. The constitution of the patient was strong enough to fight both the disease and the drugs; but in the majority of instances the doctor gets the thanks, not Nature, as should be the case. I now come to the principal point which induced me to write this letter.

You refer to the bromide of potassium as a "harmless medicine." In consequence of this, and the soothing effect it produced upon you in allaying the effects of the quinine, many of your readers, ignorant of any further particulars of the drug, will be tempted to try its use. To such I would say, "Be careful!" With all due respect to you, Mr. Root, for I recognize the fact that you have only the welfare of your readers and humanity in general at heart, bromide of potassium is not a harmless medicine but a *deadly drug*, the continued use of which ruins the mind and will destroy the strongest constitution. The use of the drug once begun, it becomes harder and harder to discontinue it, and its victim becomes a physical wreck. That there are harmless and very beneficial medicines I do not deny; but there are none such in the mineral poisons, by the use of which we but defile the temple of our body and thwart and hinder Nature. "A little knowledge is a dangerous thing," and may prove so to many of your readers in this instance, therefore I would say again to those who might be in need of the admonition, "Be careful!"

The evil effects of drugs administered by doctors is little understood by the public, and their indiscriminate use in self-doctoring is even less appreciated. The family physician may be a most worthy and conscientious man, actuated only by the best of motives in the administering of his drugs; but we must be careful before placing confidence in an individual or a body who, it seems, only too often loses confidence in himself and the art he practices. Medicine as now practiced by the regular schools is wholly experimental, and each patient is the object for the experiments. Therefore, without further evidence than this, would it not be better to turn to such simple, natural, and most efficacious means within the understanding of all, which Nature has so kindly provided for the maintenance of our physical health and for the cure of our diseases? By these I refer to the proper and intelligent uses of that great purifier water, pure and correct diet, and right and temperate habits of living. To gain a knowledge of all these means will require some study, I will admit. We may even throw ourselves open to the accusation of being "cranks;" but the end will more than justify the means, as I can state from experience. It should be the effort of all, and especially parents, to gain at least some insight into the laws that govern our being, and by their obedience to maintain



health and happiness in our homes. If, by the reading of this little letter, but a faint appreciation be gained by only a few, of the beneficial effects that would follow, the many heartaches that would be spared, and the good that would come to humanity, by a more general study of and adoption of the laws of health, I should feel amply repaid for the writing. The scope of such a letter is limited, however, and it takes long to convince; therefore, friend Root (for we are friends in one cause—the good of humanity), may I suggest the establishing of a health column in your already valuable journal, where such subjects can be discussed by your readers? Then will your illness become as an angel's visit, a message from God, prompting you to the spreading of the gospel of health. The work will be a good one, and the reward ample in the blessings of many thankful hearts. In justification of what I have said with regard to doctors and drugs, I add a few quotations from men who have made the profession their life study, and may therefore be regarded as authoritative in the matter.

Prof. Alex. H. Stevens, of the New York College of Physicians and Surgeons, says: "The older physicians grow, the more skeptical they become of the virtues of medicine, and the more they are disposed to trust to the powers of Nature;" and: "Notwithstanding all our boasted improvements, patients suffer as much as they did forty years ago;" and again: "The reason why medicine has advanced so slowly is because physicians have studied the writings of their predecessors instead of Nature."

Prof. Jos. Smith, M. D., of the same school, says: "All medicines which enter the circulation poison the blood in the same manner as do the poisons that produce disease;" and: "Drugs do not cure disease; disease is always cured by the *vis medicatrix naturæ*;" and again: "Digitalis has hurried thousands to the grave."

Prof. Alonzo Clarke, M. D., of the same school, says, with many other condemnations of the methods of his school: "All of our curative agents are poisons; and, as a consequence, every dose diminishes the vitality."

John Mason Good, M. D., F. R. S., has to say on the subject, "The science of medicine is a *barbarous jargon*, and the effects of our medicines upon the human system in the highest degree *uncertain*, except, indeed, that they have *destroyed more lives* than war, pestilence, and famine combined."

James Johnson, M. D., F. R. S., also says: "I declare, as my conscientious conviction, founded on long experience and reflection, that, if there were not a single *physician, surgeon, man-midwife, chemist, apothecary, druggist*, nor *drug* on the face of the earth, there would be *less sickness and less mortality* than now prevail."

Such extracts as these might be prolonged to fill a very respectable volume; but those I chose I think are sufficient to answer the purpose; and those who are interested in finding more can without difficulty do so.

#### DROIT ET AVANT.

[My good friend, I rather expected such letters as this when I decided to defend the average family physicians of our land: and I thank you for the many good points you make in your letter; but you are certainly too severe in your criticism of our physicians, and you are putting the matter too strongly. Permit me to take up, good-naturedly, the other side a little.

You speak of the "natural means which Nature has provided to keep us in good health." Now, I should be very glad indeed if Nature has provided for all emergencies; but, my dear sir, what does Nature do for us when failing

sight comes on from old age? Did she ever give us any thing like a pair of spectacles, or even suggest such *unnatural* means of assisting waning vision? Spectacles are not drugs, it is true; but I do believe that medicine often gives us as marked relief as a pair of spectacles gives a man who has lost his own and can not go on with his work. Some years ago, through catching cold I had a coughing-spell every night. It not only kept me awake, but my wife and the rest of the family. I knew, without being told, that such a severe cough would result in real harm if not checked. In one sense the cough was simply Nature's means of removing the obstacle, or, if you choose, Nature's protest. I finally went to the doctor. He compounded a cough syrup that stopped the cough *instantly*. I did not cough once more, and I did not feel like coughing. In fact, I have never had such a cough since, that I can remember. Again, while at Dr. Miller's I was taken with sickness at my stomach, and vomiting. For two days the good friends did every thing in their power to assist me. The markets were ransacked for something I could eat without throwing it up. I finally decided to take the train, even though I was unfit, to meet an appointment. While at the station the sickness returned, and I was in a real dilemma. Finally my good friend Dr. Miller said, "Look here, Mr. Root: I shouldn't wonder if extract of Jamaica ginger would stop this constantly recurring tendency." As soon as he mentioned it I called myself stupid for not having thought of it before. We went into a drugstore, and I feared I should vomit before the druggist could pour some into a little water for me to drink. It removed the difficulty at once; and only once during the afternoon did it recur while I was traveling. A few drops of the ginger in water relieved me again; and by super-time I was ready to eat a tolerably decent meal. Now, my stomach had got into that fashion of throwing up every thing, just exactly as I had got into the *fashion* of coughing. The thing had "got a going" in the wrong direction, and I am not sure but that one might cough himself to death, or vomit himself to death, if some remedy were not provided. I am sure our readers recollect many personal experiences of their own, similar to the ones I have mentioned. Now, I feel that these remedies are as natural and as harmless as the spectacles that help the man to go on with his work. I believe, also, that bromide of potassium relieved me in the same way, and *helped* Nature to go ahead with her building-up, instead of hindering her. Why, how *could* one build up when his unbinged nerves would not permit him to have a moment of sleep?

I was very much interested in this matter, for I was prejudiced against every kind of quieting-powders. In fact, I was prepared to insist that there must be some objectionable thing about a drug that could do such wonders. The doctor gave me a full dose right in the day time, to convince me that it did not produce sleep, but only made sleep possible by quieting the nervous disturbance; and in discontinuing the use of it, as I have explained to you, I felt no inconvenience whatever.

Another thing, my good friend, your communication is full of positive assertions. You say, "By the use of poisons, Nature can be diverted from her own wise work of dispelling disease." Now, if you call extract of ginger and the cough medicine "poisons," why not call the spectacles poison also? The latter is certainly as unnatural as the others. The doctor declared the bromide to be a harmless and innocent medicine; and I hope you will excuse me for saying that I have as much faith in *his*

wisdom, especially after my experience, as I have in your own. I know what many of the good men you quote have said; and I think it may be that some of them are right; notwithstanding, I would unhesitatingly advise the help of a trusty physician when you are suffering. I am well aware people sometimes get a mania of taking medicine the year round; and I know, too, that other people live and get along nicely, for months or even years, without taking a particle of what may be called medicine. I can not but think that your last quotation, from James Johnson, is harsh and uncharitable; and when I hear such wholesale denunciations, it makes me fear that the writer judges others by himself. Surely, I have reason to agree with you in what you say in regard to pure water; but, my dear friend, pure water did not help my cough; and with the other trouble I have told you about, a single swallow of water acted like poison. Some of the water-cure folks remind me of the good brother who said that the Bible is the only book we need in the world. Does it not become a wise man to "prove all things," and "hold fast that which is good"?

In regard to a health department in our journal, the difficulty is, so many things of importance are constantly crowding on us that Ernest and I are continually called upon to decide which among great piles of letters are valuable and will do most good.]

## OUR QUESTION - BOX,

WITH REPLIES FROM OUR BEST AUTHORITIES.

QUESTION 195. *I have a two-story 10-frame L. hive super filled with good drone comb. Would you melt the drone comb and put in foundation, or put on a queen-excluder and keep the drone comb?*

I save the drone comb and use a queen-excluder.

Ohio. N. W.

A. B. MASON.

I would use the queen-excluder, and keep the drone comb.

New York. E.

RAMBLER.

I would put on the queen-excluder and keep the drone comb.

Wisconsin. S. W.

E. FRANCE.

If the comb were even and straight, I would put on a queen-excluder.

Illinois. N. W. C.

MRS. L. HARRISON.

Keep it—but, preferably, divide it between several supers instead of putting it all in one.

Ohio. N. W.

E. E. HASTY.

If you are running for extracted honey, put on the queen-excluder, and the drone comb for extracted.

Michigan. S. W.

JAMES HEDDON.

I would put on a queen-excluder and keep the drone comb, as they are just as good for extracted honey.

Louisiana. E. C.

P. L. VIALON.

I would make wax of the drone comb, and put in foundation; for, so far as I have experimented with perforated zinc, it is not absolutely queen-excluding.

Vermont. N. W.

A. E. MANUM.

Put on an excluder every time. This drone comb is as good to hold honey as any other

comb; and if the queen is kept from it, it can be used for no other purpose than the storing of honey in it.

New York. C.

G. M. DOOLITTLE.

I would use the drone comb, and keep the queen away by the use of the excluder. The excluder is good, any way.

Michigan. C.

A. J. COOK.

Melt the drone combs, unless you are short of combs. Put in foundation, or, still better, have good natural worker combs built.

Ohio. N. W.

H. R. BOARDMAN.

I want no more drone comb in my apiary than is necessary in my estimation; but, having a queen-excluder, it is the most profitable for you to use your drone combs.

Ohio. S. W.

C. F. MUTH.

I would melt it up, for fear it would some day turn up where I did not want it. If you will promise to look after it yourself, I have no objection to your using it as you propose.

New York. C.

P. H. ELWOOD.

I'd melt up the combs unless I wanted to use them for extracting. For extracting they're just as good as any, aren't they? If the queen can't lay in them, I suspect I'd use excluders anyhow, for extracting.

Illinois. N.

C. C. MILLER.

I would keep all good drone comb, but I would not use supers filled wholly or even principally with drone comb. Sometimes, even when crowded for room, bees will not put honey in drone comb because they want the queen to lay in it.

Illinois. N. C.

J. A. GREEN.

I would use the excluder, and save the drone combs. I have concluded to let my bees build their own combs instead of giving them full sheets of foundation, especially when honey is cheap; and when they make drone comb I will place it in the supers above excluders. Excluders are cheaper than foundation.

California. S.

R. WILKIN.

I prefer mostly worker comb, upper and lower story. Bees store honey a little more readily in worker comb than drone comb; still, I have kept more or less drone comb because I did not like to lose a season or part of a season in getting it changed over, though no doubt it pays to work it out gradually.

Wisconsin. S. W.

S. I. FREEBORN.

[Well, friends, the replies start out with a surprising degree of unanimity. Friend Manum, however, objects, for the reason that the perforated zinc is not absolutely queen-excluding. I believe, however, that most of the friends have found it pretty nearly so. Friend Doolittle contends that drone comb is as good to hold honey as any other. Friend Elwood employs a good deal of hired help, and he has had some experience in having the help either forget or ignore the instructions he has given them; and J. A. Green suggests that, after the bees have prepared the drone comb for the queen to lay in, they will let it remain empty, even when crowded for room. I think very likely this may be true, although I hadn't thought of it before. Friend Freeborn strikes upon the same point, and so we may conclude there must be something in it. I remember of using quite successfully all the drone combs we could scrape up for the second story, for the extractor.]



## HEADS OF GRAIN

FROM DIFFERENT FIELDS.

### A CARD OF THANKS.

*Friend Root:*—Many thanks to you for your kind publication of Cullinan's letter, p. 762; also please accept thanks for your highly complimentary footnotes; and, indeed, the gratitude the bee-keepers have shown toward me for my services in the last 37th General Assembly have been to the extent that I fear is undeserving; for you know that, had I not met with many warm friends in the cause, my efforts would have been futile; and my heart swells with pride when I reflect that the solid representative men of the State stood side by side with me to elevate the apiarian industry of the State above its present level, and make it one of the important industries of the State and of the country. It now remains to be seen whether or not the representative bee-keepers will come to the rescue and make our first publication one of such importance as will insure the continued indulgence of our legislatures, and the increased prosperity of our pursuit. Any suggestions from you or your many readers would be most happily received. J. M. HAMBAUGH.  
Springfield, Ill., Oct. 16.

### SMUTS IN WHEAT.

*Prof. A. J. Cook:*—In this section of this State we find a good deal of smut in our wheat. At a farmers' meeting the question came up, What causes smut? Will this smutty wheat grow smut again? As you are so kind as to answer others, please answer this in GLEANINGS.  
Scotts, Mo., Sept. 11. J. F. LONG.

It is not exactly safe for one to advise or instruct out of his own line of study; but I can safely answer the questions asked by Mr. Long, in part at least.

Smuts in wheat, or in any plants, cereals, or otherwise, are really simplest plants or fungi. They grow from seeds called spores, just as higher plants do. These spores are very minute, and so often escape attention; and the non-scientific man thinks the fungi must come spontaneously. The scientist, on the other hand, knows that all life comes from germs, seeds or eggs. Thus these smuts do not spring forth spontaneously any more than fireweed comes in similar manner on the site of the burning brush-pile. In both cases the seeds preceded the plants, which by germination and development they produced.

Like higher plants, fungi must have the pre-existent seeds, and the suitable conditions, or they will not spring forth. This year, wheat smut seems to have met both these conditions, as it is quite prevalent all over the country.

There are two kinds of wheat smut, as I understand it. One receives the spores from the seed. In this case soaking the seed in blue vitriol kills the spores, and tends to prevent the smut in the succeeding crop. Because we have smut in our wheat this year makes it more probable that we shall have it next year, as the spores are now present. But it does not follow that we shall. The spores may be killed or we may have unfavorable conditions of weather next year, and so no smut, or very little, will be produced.

The common puffball is a fungus, and the fumelike emanations as we press one consist wholly of the myriad spores. Think of the crop if each spore developed! The earth would be carpeted with them. But not one in a billion grows, and so puffballs are of rare occurrence.

It is to be hoped that, next year, the conditions for wheat-smut development will be absent; but in the meantime it will pay to do our part by trying to destroy all the spores in the seed before we sow it. With no spores there can be no smut, even with the most favorable season for smut-growth. A. J. Cook.

Ag'l College, Mich.

### A CARD OF THANKS FROM ED. BERTRAND, EDITOR OF THE REVUE INTERNATIONALE.

*Dear Friend Root:*—I wish to thank you very heartily for the engraving of my photograph which you sent me by friend Dadant, as well as for the publication of my biography in GLEANINGS. It is an honor, and a testimony of kind fellow-feeling which I fully appreciate. I also wish to congratulate you on the beautiful execution of your reproductions by phototype. Friend Cowan wrote to me: "GLEANINGS has a capital portrait of you," and he understands it, as he publishes engravings also. The fact is, you have an establishment wonderfully planned and complete. It is now fourteen years since I first read GLEANINGS and saw your work, so useful, progress and increase year by year. I congratulate with all my heart on your success, and on the services which you have rendered and will still render, I trust, for a long time to come, to apiculture.

Believe me, dear friend Root.

Yours faithfully,

ED. BERTRAND.

Nyon, Switzerland, Oct. 8, 1891.

[We were very glad to do honor to the most distinguished and progressive bee-keeper, as we believe, in France or Switzerland. Such cordial fellowship of feeling is appreciated on our part. The phototype, or half-tone portrait, as we call it, can not help being true to life. We Americans, you know, have a just pride in the execution of this class of work.]

### TARRED PAPER; DOES IT AFFECT THE FLAVOR OF HONEY? HOW IT AFFECTED APPLES.

I am inclined to take sides with Mr. Bruce in his statement on page 707, as to the cause of the "terrible flavor" of his honey, and for the following reason:

Two years ago I had a few barrels of fine Baldwin apples; and, wishing to keep them out of doors as long as possible in the fall, I rolled them on some posts and covered them with tarred paper. As the weather became cold I put them into the cellar, and soon after sold the lot to one party. In a few days he called on me and said there was some trouble with the apples—they smelled and tasted badly. I went to look at them; and the moment I put my nose into the barrel I said (to myself) "Tarred paper!" and after cutting into several and tasting of them I was even more convinced of the cause of the trouble. Of course, I replaced the apples with some picked and put into barrels at the same time, but which had not been covered, out of doors. Now, the paper was laid on the barrels, and this out in the air. Would it not seem as if it would affect honey if put into a close hive, and where the heat would more or less affect it?

EDMUND K. BELCHER.

Randolph, Mass., Sept. 21.

[Friend B. I am greatly surprised. We have used tarred paper in the bottom of chaff hives for twelve or fifteen years, but never before had a complaint. We have also used tarred paper for fruit-rooms, and for almost every other purpose. I do remember that, when our fruit-room was quite new, there were a few complaints to

the effect that apples smelled of it. The bad odor, however, was entirely gone in a few weeks, and now there is no trace of it.]

#### SILK-MOTH LARVA.

The large green spinous caterpillars found by you on the spirea at Medina are larvæ of our largest American silk-moth, *Platysamia Cecropia*. There are six larger spines, or tubercles, which are waxlike, and orange at the end, two on each segment just back of the head. The larva gets to be four inches long, spins a large loose cocoon to the tree or shrub on which it feeds, and the next June or July comes forth as an immense brown moth, more beautiful even than the larva. The larvæ feed on apple, maple, cherry, basswood, azalea, spirea, etc. They are never abundant enough to do serious harm. You ask whether this larva is venomous. I assure you that it is as harmless as a kitten—yes, more harmless, for a kitten may scratch; but this one can not do even that.

You asked in last GLEANINGS how the cocoons are spun. If you had put these beautiful green larvæ into a glass can, and fed them a few days, you would have seen the whole operation, for these caterpillars were nearly grown, and hence nearly ready to pupate, and they always spin a cocoon before they pupate. The spinning is done simply by a to-and-fro motion of the head, the sticky thread of silk being forced out, and stuck as the head reaches the limit each time. Thus if the thread is a mile long, the caterpillar moves its head a mile in all in this back-and-forth motion, much as we may hold our hand still and move the end of a finger back and forth. The first framework is frequently formed by spinning to twigs or coiled leaves.

The insect sent by M. W. Strickler, York, Pa., is the saddle-back caterpillar, *Empretia stimulea*. I think I described it with figure, in GLEANINGS, on p. 902, 1887. The caterpillar is rich brown, with hairy spines at head and tail and along the side. A green saddle-like patch adorns its back. This is centered with a deep red oval spot. The hairs which deck its body sting like nettles. This is one of three or four of our caterpillars that can hurt us. This, however, is not serious. The moth is rare. It is velvety, and rich reddish brown in color. This caterpillar feeds not only on the rose, but on apple, cherry, grape, raspberry, currant, Indian corn, and sumach. It comes so late that it does but little harm. Plants suffer very seriously if defoliated in June or July; but in August and September the damage from being stripped of leaves is not great. The leaves are nearly ready to go, any way. Again, this beautiful insect is too rare to do much injury, even if it came early in the season. There are parasites that work on it that will almost certainly hold it in check. This is one of the silk-moths; and all of those sent by Mr. S. had spun cocoons in transit. The cocoon is sub-globular. They leave the plants and seek some crevice in which to pupate.

Ag'l College, Mich., Sept. 22. A. J. Cook.

#### WATER FOR BEES; GOOD CANDY FOR SPRING FEEDING.

Of late I read in "Langstroth on the Honey-bee" all about water for bees in February, and so on till spring, to promote brood-raising; and now I wish to ask if, by placing candy over the frames, say in March, that will give them water enough. Mr. Alley says, "Make candy by mixing powdered sugar and good honey, and place it over the frames, on a wire-cloth honey-board, so that the bees will suck it through the wire cloth," and one pound will keep a large swarm alive two weeks; besides, it's a good way for stimulative feeding in spring. Ques-

tion: Will the water in the candy be sufficient moisture for the bees to promote brood-raising? Ludlow, Vt., Oct. 9. A. P. FLETCHER.

[Some years ago it was thought necessary to provide water for bees when wintered in the cellar. Some results, however, seemed to throw some doubt on the matter, and finally the Michigan Agricultural College, under direction of Prof. Cook, tested the matter thoroughly, giving half of the bees in the winter repository water, and the other half none. As those with no water came through winter in the best condition, I believe that, since then, water in winter has been generally dropped.] A. I. R.

#### FASTENING STARTERS IN FOUNDATION WITH PASTE.

I put my eight section boxes into my frame, then set my frame down, bottom side up. I cut my comb or comb foundation into the sizes I wish, then I take some paste made of hot water and flour and keep it a little hot, and about as thin as warm honey. I now take my cut starters of nice comb or comb foundation in my fingers, and dip lightly one edge into paste, then place it in the section; press down very lightly, and so keep on. I like this better than a fastener. Have you tried it?

My smoker throat, or windpipe, as you may please to call it, got gummed up. I took a feather from a goose's wing, and warm water, and used it as a swab, and soon had my smoker getting its breath all right. SAM'L LANGFORD.

Bucksin, Ind.

#### LIPPIA REPENS ON THE MEDITERRANEAN.

Several years ago I observed, in several fields bordering on the Mediterranean, a little plant with which you are possibly acquainted—*Lippia repens*—which I found to be charming, for it formed a real carpet of white flowers. I planted some at home; and when the blossoms were out I was pleased to see many bees at work on the little flowers. I believe that I may say that this is one of the plants which the bees will be glad to visit in preference to many others. I have, in my garden, thyme, vanilla, portulacca, and other plants, but they are not frequented as is the lippia. Continuing the comparison which I have made above, on the carpet of white flowerets there seemed to be also a carpet of bees, and that from morning till the end of the day. If one remembers that lippia begins to blossom at the end of May, and that in September it blossoms again, and that the blossoming is full during the greatest heat and the most severe drouths, it will seem that this little plant is very valuable to bee-keepers. Perhaps you know this, and perhaps I overestimate a little the services which lippia may render to the apiculturist; but as I had occasion to write on other matters I thought it would do no harm to add a few words, though it may be nothing new to you. CHAS. BIANCONCINI.

Bologna, Italy, Oct. 6.

#### CHICORY AS AN OREGON HONEY-PLANT.

The plant sent by Mr. Hilton is common chicory, *Cichorium intybus*. It is introduced from Europe, and is common in the East as well as in Oregon. It is a composite plant, and so of the same family as goldenrod, boneset, and asters. We may expect nearly all the composite plants to secrete nectar in favorable conditions, so need not be surprised at what Mr. H. says. The root of chicory (or succory or cichory, or names of this same plant) is often used as a substitute for coffee. The showy blue flowers open only in the morning or on cloudy days.

Agricultural College, Mich. A. J. Cook.



## LADIES' CONVERSAZIONE.

I have been so very busy that I have not found time before this to answer the questions of Mrs. Tittsworth. Yes, we carry our book from hive to hive, just as we do our smoker and chisel. If we are at work near together, the book is laid on a hive near us; then Dr. Miller makes his own entries and I make mine. But when he is at work at one end of the apiary and I at the other, then it is somewhat more difficult to manage, and we have tried different methods. Quite often I call to him, and he makes the entries, or the reverse. But I confess I don't just like this way, as by its use we have occasionally missed making a record. I like better the plan of having a small memorandum-book tied with a good strong string to my apron, so that I can't lose it, making the records in this, then copying at night each day's work in the large book. Of course, one of us uses the large book through the day.

There is only one objection to this plan that I know of. I always want to know the previous condition of the colony I am going to work at, and for this I need the large book. It very often happens for some reason that this may be necessary. For example, there may be a young queen in the hive that needs clipping, and a little caution is necessary not to give too much smoke, or you may have trouble in finding her. To obviate this difficulty I write the numbers in the memorandum-book, leaving space enough at each number for any entry I may wish to make. Then I take the large book, and glance over the records of the different colonies. If there is nothing unusual I leave the numbers as they are, making no memorandum. If I come to one that is queenless, I write "qless" after the number in my small book, using different characters to mean different things, no matter what, so I understand them. If I come to anything very complicated, I make some mark that will refer me to the large book. It takes but a very little time to get my small book ready, then I am quite independent.

We have tried clipping queens in the way you mention, but have not made a success of it. Our queens will not keep still enough.

In reply to Mr. J. F. McIntyre, I would say that we allow one page of the book to three colonies, the page being 13 by 5½ inches. That gives us ample room for all records, as we have a new book each year.

I indorse what Mrs. Axtell says about small chips used as smoker fuel. I have used them, and found them very good when perfectly dry.

We were so very busy getting our honey ready for market that some of our feeding was not done until so late that Dr. Miller thought best not to feed sugar syrup, but concluded to feed unfinished sections. For this kind of feeding we found our reversible bottom-boards a good thing, as the two-inch space under the frames gave room to put the sections directly under the bees. We filled a wide frame with these sections, then slipped it under the brood-frames and closed the entrance with a separator cut to fit, leaving room at each end for only a few bees to pass at a time. Sometimes the space was a little too shallow to let the sections under. In that case both wide frames and sections had to be cut down a little. A few brood-combs filled with honey were used in the same way. To hurry matters, sometimes the sections were reversed as soon as the upper side was emptied.

We first uncapped any honey that was sealed. I don't know that I ought to call it uncapping, as we simply struck the cappings a few times

with a wire hair-brush. It did the work nicely and very easily, and in much less time than we could have done it with a knife.

Marengo, Ill., Oct. 21.

EMMA WILSON.

### PREPARING FOR WINTER.

We had very little surplus. Bees worked on both alsike and white clover, but not much was accomplished after raspberry-bloom was gone. As soon as buckwheat blooms we remove the white honey and diminish the surplus room. This makes fewer boxes to handle and to be soiled if there is no fall honey. It saves heat and causes more honey to be stored below, ready for winter. For the same reasons it is best to take off all boxes quite early. As we take off the honey we examine the lower story, frame by frame. All frames not needed are removed, being replaced by division-boards and chaff. The number of pounds of honey is noted, small sticks laid across the frames, and a porous cloth laid over them. Turn back one corner for feeding. We prepared syrup by heating 10 lbs. of sugar with 4 quarts of water and 3 lbs. of honey. As we could not buy feeders we filled two-quart glass cans and inverted on grooved boards. Three or four can be placed in a hive at once, making enough for winter. As soon as the feeding is done, put on chaff cushions to save the heat. We have no pure Italians, but the bees with golden bands are the ones that are wide awake, and ready for work or—robbing! It was in their hives that we found honey.

### STRAWBERRIES.

I should like to tell you, Mr. Root, how GLEANINGS improved our bed. The whole bed was kept mellow and clean. I went three times over one half, placing the runners six inches apart, as GLEANINGS advised. I also placed a chunk of earth on each plant. That part of the bed has now an even stand of plants, in spite of drouth. The other half looks ragged. The plants are thick in some places, with none at all in others. While it is an awful lot of work, it pays. Have the bed smaller, if need be. It also pays to clean out an old bed, as it will make a longer season than a new one. Ladies, please write on other subjects while gentlemen discuss frames.

MISS LIBBIE WILLIAMS.

Delavan, Wis., Oct. 3.

### MAKING MONEY WITH CHICKENS—T'OTHER SIDE.

*Friend Root:*—You speak very enthusiastically in GLEANINGS about the poultry business; but I should like to give you a glimpse of my experience. I have tried now for six seasons to raise a flock of geese; and the most that I ever had to reach maturity was seven. Last spring my geese laid 30 fine large eggs, and all hatched but two. I had as fine a lot of goslings as you would wish to see; but they got cramps, or something, and about half died, and the rest of them dropped off one by one until only seven are left. I set several hundred hens' eggs. About half of them hatched, and I had about 250 chicks. Well, I worked with the chicks until I did not know what more I could do for them, when some of them began to droop. Upon examination I discovered a few lice. I set to work and greased them, as so many recommend. It killed the lice—yes, and the chicks too. Then I tried insect-powder. This seemed to do pretty well for a time; but it seemed the vermin soon got used to it, and paid no more attention to it, but kept on killing my chicks until now I have only about 50 left. How is that for a business? 'Tis true, that eggs are 25 cents per dozen; but how often does this happen? They have not reached so high a



price here for several years. Well, to tell the truth about it, I am glad that they scarcely ever reach so high a price. What would poor hard-working people do who live in the city, who can hardly afford to pay ten cents per dozen? It is with the poultry business as with any other—all have their bright and their dark side; so we must try again and be thankful for what we do have. Mrs. EDW. SMITH.

Carpenter, Ill., Oct. 21.

[My good friend, I well know the difficulties in keeping poultry successfully; and may be, if I had a chance to try it, I should have as many mishaps as you do—at least, to start with. But do you not know that we meet similar difficulties in all rural industries—in fact, in almost every industry in life? But men and women do succeed in overcoming just such difficulties. We have fought down the potato-bugs, and pretty nearly killed them out. Fruit-growers have mastered the codling moth, and our experiment stations have just solved the problem in regard to scabby apples. W. I.

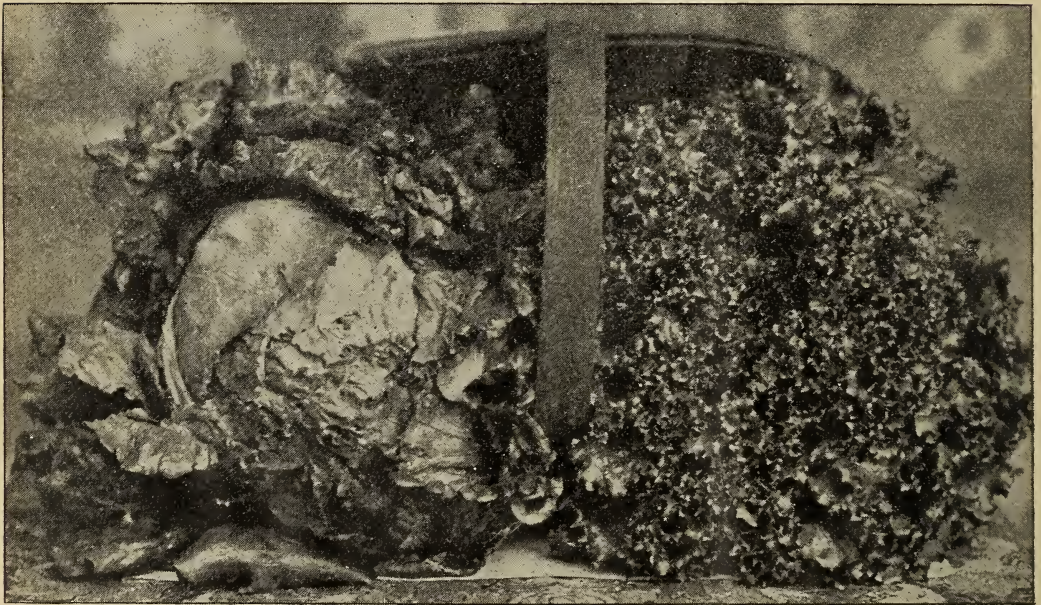
Now, my good friend, whenever prices come up to a point where farming *does* pay, the poor must pay more for these very things that farmers produce. So you see that what is somebody's else loss is another's gain, and therefore affairs are not in such a very bad state after all. And, by the way, to get right down to it, this is a pretty good country; or to go a little further, a pretty good world to live in. In other words, is it not true that God knows best what is for our greatest good and highest happiness?]

A. I. R.

### THE POSSIBILITIES IN THE GARDENING LINE IN THE STATE OF WASHINGTON.

A REPORT FROM ONE OF OUR BEE-KEEPING FRIENDS.

*Friend Root:*—Knowing that you are interested in fine vegetables I send you a photo of two heads of lettuce, raised from seed bought of you. The one on the left side is New York; the other is Grand Rapids. The New York



TWO HEADS OF LETTUCE, NEW YORK AND GRAND RAPIDS, RAISED IN WASHINGTON.

Chamberlain, of whom I have told you, has, even this present season, trees whose limbs are breaking down with the most beautiful, perfect, fair, round apples I ever saw. Nobody else has any within miles—or, at least, none of any account. At the present time, in almost every neighborhood you can find people who have mastered the obstacles, and are making a success with poultry, bees, small fruits, apples—yes, and even corn, potatoes, and wheat. Where there is a will there is a way. If it were not for these drawbacks we should never be able to get the prices we do. You speak about poor hard-working people not being able to have eggs when they are 25 cents a dozen. Well, then I suppose they must go without them. You have heard the lament that has come up so frequently of late, that "farming does not pay."

weighed 3 lbs. 4 oz.; the other measured 18 inches across as it stood in the garden, and weighed  $1\frac{1}{2}$  lbs., and was a beautiful plant. I sold \$45 worth of the New York, raised on five rods of land; and have 556 Mammoth King onions growing on the same ground. Some of them measure eleven inches around the bulb. I owe to GLEANINGS a small hint on transplanting that I put to practical use. I do not know what the possibilities of this country may be. I have a photo of eleven Sharpless strawberries that filled a common berry-box full, and the largest berry measured nine inches around. I do not wish to boom the country, for it has already been done quite sufficiently. Seeds bought of you have given the very best satisfaction.

ALBERT McCAY.

Olympia, Wash., July 17.



## HIGH-PRESSURE GARDENING.

BY A. I. ROOT.

### RAISING WHEAT.

Some of you may wonder what wheat-growing can have to do with high-pressure gardening. Well, you listen to what I have to say, and see if you do not think it has a great deal to do with it. In riding on the cars a few days ago I was talking with an old farmer who occupied half of the seat, about the crops we saw out of the window. He told me a story that has been much in my mind ever since. The story was something like this:

He lost enough wheat last year by the use of a worn-out drill to buy a *brand-new machine out and out*. The drill was not exactly worn out either; but the drill-teeth were worn until they were so dull they would not stay in the ground. The consequence was, a great part of the wheat was left uncovered. He did not notice it particularly until the field was all sown, then he went on it with a harrow, and tried to harrow it in just as he would if it were broadcast. This might have made matters some better; but a neighbor of his was in the business of raising turkeys considerably; and the turkeys took in the condition of affairs about as soon as he did. The consequence was, the stand was so poor he very likely lost enough to buy a new drill. The only remedy was to have plowed it all under and seeded it again; but he did not know how bad it was until the wheat came up.

"Well, my friend, I suppose, after such a lesson as the above, you now own a brand-new drill of your own, of the most approved and latest pattern?"

"Why, no," replied he; "I lost so much on that crop last year that I hadn't any money to buy a new drill with."

"Well, what did you do?"

"Why, several of us went and told the man who owned the drill we used last year that we could not afford to pay him 25 cents an acre unless he took off the old drill-teeth, and got a set of new ones. He accordingly did it, and this year my stand of wheat is all even and regular, and not a grain of it was left uncovered."

Think of it, friends, and consider such a state of affairs. A set of drill-teeth costs only a little; and yet the owner of the drill, and the farmers who employed him, were such a stupid lot that the thing went on until losses resulted such as I have told you. They paid 25 cents an acre for the use of a drill that, on one single field, damaged them to the extent of fifty or sixty dollars. Just the day before this talk occurred I had been sowing that field of rye around the windmill. The ground was in beautiful condition, as I told you, after the potatoes were dug and the harrowing we gave it. A little rain fell during the night, just before we were ready to roll the field the last time. I told the men I was afraid the roller would compact the soil a little too much. But the rain had made the lumps so soft that they mashed up so beautifully we concluded to go on and roll it. This made the ground so hard in some places that our dull drill-teeth slid over the top instead of going down into the ground; and the first I knew a flock of chickens belonging to a neighbor were following the drill, picking up the rye that was uncovered. Now, I do not like that kind of work. We use this same drill for sowing corn, beans, beets, spinach, peas, and the greater part of our garden seeds. But of late, when they sow peas and white beans, I have

noticed quite a few of the peas and beans in sight, especially after we have a light rain to wash the light seeds clean, so the eye can see them. This has happened so many times that I have had a man go over the peas and beans with a rake, covering those that were left in sight. Please remember, we sow very small patches at a time, so as not to flood the market and break down prices; therefore it was not a very big job to go over the strip with a rake. Well, I noticed the matter was getting somewhat worse; but it did not occur to me that it was because the drill was becoming dull. I think the drill cost about \$75, perhaps five years ago; and we have let it out at 25 cents an acre until we have got, perhaps, \$40 back on it. No farmer who uses it has complained that the teeth were dull, and so it has been allowed to go. In relating the circumstance to another farmer, he said that, if the ground were just as it ought to be, he preferred the drill with rather dull teeth. New teeth, he said, would often go *too* deep, and thus defeat us in another direction. I then suggested that there should be some gauges on the teeth that would let them go just so deep and no deeper; and at the Summit County fair I saw just this arrangement attached to just such a drill as we are at present using. It seems to me it will certainly pay for market-gardening, if not for raising wheat. Then we can have the teeth sharp.

Three or four days after, I visited T. B. Terry's farm, and looked over his wheat. It is the most perfect stand I ever saw. In fact, his entire fields look almost like rows of little onions set just so far apart. The space left where the drill turns and makes another "bout," was so exactly like the distance between the drill-teeth that one could hardly tell where the drill had gone the other way. Another thing, there are no lumps in friend Terry's wheat-fields. As I could not find a lump on the surface of the ground I dug down between the rows of wheat to see if I could dig up any lumps. Although the ground was so fine and mellow I could put my hand in it all over, it was just as fine as far down as I could reach. Friend Terry was absent, and so I interviewed his son. He said his father always drove the drill; and the ground and every thing else must be just according to his notion before he would go ahead with it. Now, friend Terry not only has the finest and best tilled fields I ever saw, but he has the most *perfect stand*; in fact, there is nothing to compare with it in either Summit or Medina Counties. Friend Chamberlain's 36-acre wheat-field, thoroughly underdrained, comes the nearest to it of any I have seen. But there were some lumps in sight, and the stand was not as perfect as Terry's. Friend Chamberlain has been on his farm only a year, remember, and this, possibly, makes a vast difference.

After I had looked at the beautiful stand of wheat, and enjoyed it as it showed to excellent advantage in the rays of the declining sun, I turned to the clover-fields that covered every part of the farm the wheat does not cover. I certainly never saw any thing in the way of clover in October that would compare with it. The stand of clover was even, the leaves large, thrifty, and of such a bright green that it was a sight to look at. I spoke to the son:

"Why! wouldn't that clover just make a regular '*picnic*' for any kind of stock? Now there is such a tremendous amount of feed there, I suppose a great many farmers would turn their stock right into it."

"Well, they might in some places, Mr. Root, but they would not in this neighborhood, I tell you. They have learned better."

Doesn't this account largely for the beautiful mellow soil with no lumps, and with such won-

derful fertility? Many of you have doubtless read Terry's articles in regard to the preparation of his wheat-ground. You know how he keeps at it until the lumps are all mashed, and the whole surface thoroughly fined up and all alike. Well, in riding across the country and looking for wheat-fields without lumps, what do you think I saw? Oh dear me! In some places the lumps were as thick as they could lie, and some of them almost as big as your head. How should one expect to get a paying crop of wheat under such circumstances? This getting a perfect seed-bed, I suspect, is a work of years. In the first place, we must have perfect underdraining. Then no stock must ever set foot on the ground when it is soft; neither must tools be allowed on the ground when it is too wet to work. After this, turn under regularly great rank growths of clover, and your soil will begin to get mellow and soft and fine—yes, even though it is naturally some of the most unpromising land to be found.

#### FINDING WHERE YOUR UNDERDRAINS ARE.

Much has been said about keeping a map of all drainage, that the owner may at any time know where to dig to find a tile. We have already experienced considerable trouble, and sometimes wasted several hours of hard work, in finding a certain line of tile. I think it was the *Ohio Farmer* that said lately it is a good plan to mash up all the broken tile, and strew the bits along the top of the drain after it is filled up. No matter how much you cultivate and plow the ground, these bits of broken tile will, more or less of them, be visible, and indicate where the tiles are laid. There will always be more or less broken or soft tile, and I do believe this is the very best use that can be made of them.

#### STARTING A BOOM ON CERTAIN PRODUCTS BY LOWERING THE PRICES.

Where one sells things at retail by sending a wagon around town as we do, a little decline in prices may make a big difference in the amount of sales. Lima beans have lately been going slow at 10 cents a pint. Well, the frost has not killed ours yet, even up to this late date, Oct. 22; therefore I told the boys two days ago that we had better put the price down a little, and directed those on the wagon to carry the beans in at every house where they stopped, and announce that they were only 8 cents instead of 10. How much difference do you suppose a drop of 2 cents made? Why, they sold *four times as many*, and came pretty near stripping the poles of all that were large enough. Perhaps *showing* people clean boxes of beans just shelled, good measure, had much to do with it; for we often push any thing we happen to have a surplus of in just this way.

#### TEN CENTS A POUND FOR SPINACH.

A few days ago I asked them why they did not carry any spinach on the wagon. They said nobody wanted it at this season of the year because there was so much other stuff. Last Friday, the 16th, however, I noticed our Extra Curled Bloomsdale spinach was growing so very thrifty that some of the heads with their rich dark green were really a sight. By the way, a few seeds were in the seed-drill when we made our last sowing of bush lima beans. It was on a piece where we had plowed under a heavy growth of strawberry-plants; and this, perhaps, accounts for the great luxuriance of the spinach. A basket was fixed in neat order, and put on the wagon, and I told them to try it at 10 cents a pound; and if it did not bring 10 cents to come back to the old price of 5. Its beautiful attractive appearance and rank luxuriance did the business. It was gone at 10 cents

a pound in a twinkling, and this in the middle of October, when, if we had only taken the pains, we might have had an acre of it that could have been sold at a profit at *half a cent a pound*. Of course, a town like ours would not take very much of it; but if such spinach could be put into the city markets, I feel certain that vast quantities could be sold at tremendous prices. I begin to suspect that no ordinary grounds will produce spinach up to its highest notch of excellence. Like many other foliage plants, it wants the richest kind of soil. And, by the way, we always get an enormous crop of any thing after we have turned our strawberries under.

#### LINSEED OIL-MEAL AS A FERTILIZER.

Our Ohio Experiment Station has just been making some experiments with linseed oil-meal and nitrate of soda as fertilizers for German millet. Both give an improvement over the unfertilized plants; but the nitrate of soda, as heretofore, not enough improvement to pay cost. The linseed meal, however, went away ahead of the nitrate of soda, and this was when it was applied directly to the soil. Now, they say that not more than a third of the fertilizing value of the meal is lost in feeding it to stock; therefore, to use their own words, "Linseed oil-meal offers a far cheaper source of fertility to the Ohio farmer than any of the so-called commercial fertilizers or phosphates."

#### THE OREGON EVERBEARING STRAWBERRY.

*Friend Root:*—About a year ago I was foolish enough to invest \$2.00 in a dozen of Winquist's Everbearing strawberry-plants. Under the best of care they proved far inferior to common sorts for the first crop, to say nothing of there being no blossoms or berries later in the season. There were no indications of the everbearing property about them. Now, I was led to make this investment from the fact that I knew you had had these plants upon your grounds for some two or more years; and having seen no warning (except a very mild sentence or two in GLEANINGS of two or three months back) I concluded they were at least not a very big humbug, and sent my money only to become a little richer in experience and more cautious of mankind in general. In a word, I look upon it as one of the worst humbugs that has reared its head in respectable journals in a long time. The only thing that can be said in favor of the plants, so far as my experience goes, is that they are good strong growers, throwing up an abundance of dark green foliage, and a tendency to put out runners in profusion. And now, Mr. Root, what can you say in defense? And how are we to account for the silence of all, or nearly all, of those who, in reports during the last year or two in GLEANINGS, have reported purchasing these plants and have failed to report in their favor or against them? Is it a huge "combine"? I will not believe it. D. W. C. MATTHEWS.

Ypsilanti, Mich., Oct. 2.

[Gently, friend M. We have reported each season, since receiving the above strawberry, our success with it. When we first put it out in our rich plant-beds, in a sheltered location, it grew rank, and gave us some of the finest berries before almost any other variety. On account of some new buildings, we were obliged to move the bed while in full bearing. It was taken into the fields, and received the same treatment as our other varieties. Since then it has amounted to nothing comparatively. It is, with us, continually blooming and setting fruit during the fall; but there is not enough of the fruit to amount to any thing, and the plants



grow with very poor vigor where they are now, compared with the other sorts. Therefore you see it is difficult for me to either condemn or recommend it. Had I made a report while it was in our rich plant-beds I should have called it a great acquisition; but out in the fields, along with the others, it is certainly not a success in our locality. One or two have purchased plants, and reported favorably; but the general testimony seems to be that it is not a success here in the East. There is certainly no "combine" about it. There is not money enough in it to make it an object, even if any one were so unscrupulous as to *wish* to push a worthless plant. Besides, our experiment stations are always on the alert to expose any deliberate plan to humbug the people. They have recently reported that it seems to lack vigor under ordinary treatment here in the East. You report, however, that you find it a "good strong grower." A. I. R.

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## OUR HOMES AND MY NEIGHBORS.

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When ye spread forth your hands I will hide mine eyes from you; yea, when ye make many prayers I will not hear: your hands are full of blood.—Isa. 1:15.

Our county jail has been for a long time empty. In fact, since the saloons were banished from Medina, as a rule our jail is empty. As an exception it has an occupant; and this occupant is usually there for something pertaining to the liquor-traffic, directly or indirectly. Last Sunday a little girl in Sunday-school told me there was a man in jail. He looked like a hard-working farmer, just about the same age that I am. Why should he be in jail? I found he *was* a farmer, as I judged, and a hard-working man. He had, however, been induced to get liquors at wholesale—as he said, at first for medical purposes; then, under the influence of temptation, he let others have it, and finally the officers were on his track. He received notice that they were coming one day, when he was thrashing. He left his work, and sought refuge at the home of a relative in an adjoining county. His wife wrote him (under cover, of course) that he had better leave the State, as the prospect was that he would be fined two hundred or three hundred dollars, and may be a year or more in the workhouse. At the time of his flight he had in his pocket some money that did not belong to him. However, he reasoned that extreme cases justify extreme measures, and he decided to take his wife's advice and use this money to get beyond the reach of the law. He went to the railroad station and called for a ticket to his place of destination, and found he had just money enough to get him through. Just at this time, however, he began to hesitate. Although he had been a liquor-dealer, as I have told you, in one sense of the word, he had never before committed a deliberate crime like the one he now contemplated. Years before, he had been a professor of religion and a member of the church. The church dwindled down, and what were left got into a quarrel; and in that quarrel he became involved, and they said some unkind things of him, misrepresenting his motives; and he got soured. He concluded he would read his Bible at home, and be a Christian all by himself—or he and his wife would lead Christian lives together without any help from the church. It is not at all strange that his Bible soon became neglected, that his religion became a thing of the past, and that he resolved to adopt desperate measures in order to help him out of his straitened circum-

stances. By the way, friends, do you know how often circumstances *do* become straitened when one loses his religion or lets it go? Yes, though he may work hard, and strain every nerve, misfortunes and trouble come upon him. Instead of, as we have it in the first Psalm, "Whatsoever he doeth shall prosper," it seems just the other way—whatsoever he doeth shall *not* prosper. But, to go back: In order to help him out of his straitened circumstances he went to selling liquor, at good profits, no doubt. But no prosperity came of it; and when he was about to be arrested for violating the law he decided to use money he had no right to, and was even counseled by his wife to do this in order to evade the law. Perhaps I said his religion was forgotten. May the Lord be praised, it was not quite forgotten. When he stood before the ticket-office with the money in his hand, an old text flashed through his mind that he had heard years before. The text startled him. He told the ticket agent that, on further consideration, he would not take the ticket. He put the money into his pocket, and, as soon as he could, he restored it to those to whom it rightfully belonged. Of course, he was arrested. He told me he gave himself up to the officers of the law. If it was not that way exactly it was pretty near it, for my good friend the sheriff said the prisoner made no attempt to escape; and here I found him with the sentence of four months in the workhouse and a fine of a hundred dollars. He had already directed that his horse be sold to pay the hundred dollars, although the horse was pretty nearly all the available property he had in the world, and he was going on the morrow to the workhouse to commence his servitude of one hundred and twenty days. He felt pretty sad over the whole matter; and although he had decided to abandon his evil ways and do right as far as he knew how, it did not seem to have brought him very much comfort.

Do you want to know about that text? Well, it is the one at the head of this talk to-day. An eccentric individual who preached occasionally, delivered the sermon. People were a little surprised at the strangeness of his text, and this friend remembered it on that account. After a little questioning I found I knew the preacher well—in fact, he was a near relative, having married my own mother's sister. Both are dead and gone; but his eccentric sermon and strange text are still here continuing their work nevertheless. Ah, friends, this is only one of the wonderful things about the Bible and those Bible texts. Cast thy bread upon the waters, and thou shalt find it after many days. Yes, even *after* you have passed away, the words you have uttered may sound down through the ages. The connection, perhaps, is not very clear without a little explanation. This person had been a praying man in years gone by. Very likely he expected to go back to his religion by and by, just as *you* and *I* have thought we should do in times past. When, however, he stood face to face with the crime he had contemplated, conscience told him if he went on God would not hear him. You remember the text, "If I regard iniquity in my heart, the Lord will not hear me;" and this text before us not only contains this, but adds, "And when ye spread forth your hands I will hide mine eyes from you; yea, when ye make many prayers I will not hear: your hands are full of blood." Of course, he did not propose to dip his hands in blood; but crime is sure to follow crime, and probably bloodshed would eventually be the outcome. As I sat by his side in the jail I continued to read. The next verse runs, "Wash ye, make you clean; put away the evil of your doings from before mine eyes.

Cease to do evil." Why, was it not wonderful? But a minute before, I was meditating where I should find something in the Bible applicable to his case and to his state of mind. While I was turning the leaves absently he directed me. I do not know that I ever noticed before these wonderful words in the first chapter of Isaiah. Now just look at the words of the next verse. After I read "Cease to do evil," I followed on—"Learn to do well." What plain, simple terms the prophet uses! And a little further on we read, "Come now and let us reason together, saith the Lord. Though your sins be as scarlet, they shall be as white as snow; though they be red like crimson, they shall be as white as wool." It seemed then just as if the words of the *Master* shone through those Bible texts. In fact, I had a sort of feeling that some third party was there with us, pointing out to me what to read, and telling me what to say. I cheered and comforted my poor friend. I told him that he had obeyed the scripture command so far. He had ceased to do evil as well as he could, and was trying to do well. As I shook hands with him, perhaps never to meet him again, there were tears in his eyes; but, dear friends, they were not altogether tears of sorrow at the hard path that lay before him. A new hope had come into his soul there in that jail; and I fully believed he was honest and sincere in his determination to take up again his forgotten and neglected Bible, and to leave all and follow Christ Jesus. He said there was no church of the denomination he belonged to, now in his neighborhood. Said I, "But, dear brother, never mind if there is not exactly that one church you like and prefer. There is certainly *some* church or some gathering of Christian people. Unite with them, and *help* them in their endeavors to lead Christian lives. Never again make the mistake of trying to follow Jesus all alone by yourself. It never works." "He that loveth not his brother whom he hath seen, how shall he love God whom he hath not seen?"

And now, dear brother or sister, if this little lesson strikes any one of you—if any who look on these pages have strayed away from the fold because the church has dwinded down, or there has been quarreling, take warning, I beseech you, and do not wait until the *prison*-doors come, but go now like the prodigal son, and take up your cross, and live and die a live, earnest Christian.

A hard thing for humanity to learn is that there is no satisfaction nor profit in sin. "The wages of sin is death;" and yet, after repeated experiences showing the truth of this, we can not believe it. Satan persuades us that we can be happy with ill-gotten gains; and yet we have illustrations continually, showing us that this is not true. The man who runs away with money belonging to somebody else, or with money intrusted to his care, never finds happiness nor enjoyment of any kind. A case illustrating this is just before me. One of our bee-keeping friends, Mr. C. G. Ferris, of Miller's Mills, N. Y., was induced to send ten kegs of honey to an institution styling itself the Champion City Produce Co., Springfield, O. They had quite a taking name, and he thought that they were all right. After a while he inquired about his honey, and they told him that one of the kegs was smashed, and the contents lost, and they were waiting to get the railroad company to settle up in regard to it. Although the price agreed upon was F. O. B. at friend Ferris' railroad station, he finally, to get the matter settled, told them to deduct the price of one keg and send the rest of the money. Then they did not answer at all. The matter was submitted to us, and what do you think investigation

showed? First, that the Champion City Produce Co. belonged to a young man by the name of Ed. L. Bowlus; that he was continually making purchases of every thing he could get hold of, without any intention of paying a cent for any thing; and he even succeeded in getting a large amount of stuff. It is strange that bee-keepers or anybody else should persist in sending honey or other produce to any person or institution without first making inquiry at the bank, or inquiring of us whether such persons are reliable. As this young man Bowlus never paid for any thing, one might suppose he would get lots of money, and have a good time so long as he could escape the law. Did he? Not at all. After continuing in this way, and getting all the enjoyment that property with a guilty conscience could give him, he—*committed suicide!* When a man has deliberately decided on such a course of fraud and cheat, he has, of course, turned his back on God. He has abandoned all thoughts of right, justice, and religion. He is in opposition to the great God above. In the language of our text, he knows that God can not hear him. Right along in the same line he defies public sentiment, and the good opinion of his fellow-men; he forfeits all claim to sympathy from his fellow-men, and finally ends in suicide. Oh! shall we not be warned while yet it is time? shall we not, in the words of Holy Writ, "cease to do evil and learn to do well"?

There seems to be something really strange about the way a man loses the respect of his fellow-men when he loses his respect for God. When a man says in his heart, "I am going to look out for No. 1, and have a good time without any regard to conscience or any thing else," he commences almost at once to ignore the claims of humanity upon him. Just a few days ago an incident came to my notice as follows:

A man of considerable property rented a little place to a German family. This family had borrowed some money of a miller near by. By hard work and careful saving they had scraped together the amount necessary to take up the note; and as this man of wealth was going to pass the mill, they sent word by him that, if the miller would send the note by the bearer of the message, they would take it up. This wealthy man, however, saw a chance for speculation. The note was for \$75.00. Instead of delivering the message as given him, he told the miller the German family were not doing very well, and that there was but little prospect that they would ever be able to take up the note at all. He remarked that *he*, however, might get at least a part of it by letting them *work it out* on his own premises. The miller, not suspecting any trap or swindle, finally sold the note of \$75.00 for \$40.00—a little more than half price. The rich man carried the note back, presented it, and got his \$75.00. The German family supposed, of course, that he had simply brought the note for them to take up. So he put \$35.00 into his own pocket as the result of his own shrewdness. Of course, the matter got out; but as he was used to such sharp practices, he seemed to care but little or nothing about it. He offered the miller \$40.00 for it, and he took him up; so in one sense he made what might be considered a fair and square bargain. Very likely he could have been arrested for obtaining the note under false pretenses or false representation; but as the parties were poor and he was rich, it was allowed to pass. I need not tell you that such a man never thinks of prayer. Well might the prophet say to all such as he, "When ye make many prayers I will not hear." At another time this same man of wealth and means purchased a farm. I have seen the farm,



and am personally acquainted with all the parties. The owner of the farm was well along in years, and there had been indications that his mind was failing. Notwithstanding, he sold the place in spite of all his children could do to persuade him not to let it go. Almost immediately after the sale, however, he became very sorry for his rash act; and, in fact, as he looked over the home where he had been so many years, and where all his children had been born and brought up, he became terribly homesick, or, as the boys sometimes say, "sick of his bargain," and finally made overtures to this man of wealth to trade back. It was the same man, mind you, who bought the note by false statement, and he held off and refused to let the old gentleman have his farm back until he actually offered and paid him *fifteen hundred dollars!* The whole transaction occurred within a short time. Now, a good many of you may say that this was perfectly fair and all right. Very likely there was nothing *illegal* about it. But, can a man have a good conscience before God and his fellow-men who thus takes from the pocket of a neighbor the sum of \$1500 for trading back? Trades or purchases are usually made with the understanding that the exchange is a *fair* one on both sides; therefore if one of the parties should change his mind, or repent of his bargain, under ordinary circumstances fairness and justice would indicate that the purchaser should receive enough to pay him for his time and trouble, but no more. What do you suppose became of the rich man? If he continued to meet with such chances as I have named, to "speculate" every day, he would soon become a "millionaire." Do you think so? God forbid. I do not know how millionaires usually get their money; but this man, a little later, was involved in a scene of crime and murder. He lost his property, lost his good name (if, indeed, there was any good name to lose), and fled the country. When he started out in his evil ways, as I have said before, he defied God and justice. In the language of our text, the Father above had hidden his eyes from him. He did not dare to even *look* toward a just God; and finally he did not dare to look into the face of *any one* in the community who knew him. He commenced by robbing his neighbors until no one had enough confidence in him to permit him to rob them any more. His final act was one involving the ruin of a child, the daughter of a near neighbor where I used to live; and murder was the final end.

While speaking of this matter of trading back, I want to mention an incident of my early life in business—an incident that taught me a lesson. It may sound somewhat like boasting; but at the time I did it I had no thought that I was doing any more than any one ought to do. An elderly gentleman came into the store to buy a watch. He had never carried a watch, and was therefore entirely inexperienced in such matters. After spending an hour or more I rigged him out with one that seemed to suit him. He paid the price asked, and went home apparently well pleased. Now, it seems that he had decided on the purchase of a watch without saying a word about it to his grown-up children; and when he exhibited it to them and told them he had patronized a town jeweler without having someone experienced in watches go along with him, they laughingly declared that he had been swindled outright—that the watch was not worth half what he paid for it, etc. However, he insisted that the man he traded with *looked* honest, and he believed he was honest. One of the sons said, banteringly:

"Now look here, father. You go right back to the jeweler to-morrow and ask him how much money you will have to pay him to trade

back. If he does not admit by his reply that he swindled you to the extent of five or ten dollars, we will, with you, conclude he is an honest man."

They worried the old gentleman so much that he concluded to test his new friend the jeweler. As he came into the store the conversation was something as follows:

"Mr. Root, suppose I decide that I do not wish to keep the watch just now, after all; how much money must I pay you to trade back?"

"Why, the watch runs well, does it not?"

"Oh, yes! at least, I suppose it does. Yes, it is just with your clock to the minute. There is no trouble with it, so far as I know; but I should like to know just how much money I must pay you to take it off my hands."

It was something of a struggle, I confess. I had worked hard for perhaps two hours to make the sale, and I did not at all relish taking the watch back and giving him his money. However, as I had sold the watch at a small profit I concluded that the most gentlemanly way would be not to make any charge, as it was returned in perfect order; therefore I told him that he could have his money back without any charge for my time, if he decided he did not really want the watch. So I counted out the exact sum, and laid it before him on the counter. Then you should have seen his face as he burst into a laugh, and put the watch back into his pocket. Of course, he explained to me the whole circumstance. But, didn't he crow over the children when he got home! They, of course, had to own up beat; but they declared that it was a most remarkable thing to find a jeweler, or, in fact, a man in any other similar line of business, who would "swap back" without a "bonus." Well, he exhibited that watch with great pride to all his friends and acquaintances, and told the story, and brought other men to my store to buy watches. Why, dear friends, it was a better advertisement for me than any notice I ever put in the papers, and yet I did not know it. "O ye of little faith! wherefore do ye doubt?" A man who is honest and fair, and upright and true, not only has the love of God in his heart to cheer him on his pathway through life; he not only has the confidence and esteem of his fellow-men, but he actually *makes more money*. And finally, when trouble comes—yes, when sickness and death are near, and he feels constrained to throw himself on the mercy of the great God above, he need not fear the concluding words of our text, "I will not hear: your hands are full of blood."



Sin, when it is finished, bringeth forth death.—JAMES 1: 15.

Is your apiary all fed up and in winter quarters? Ours is.

SECRETARIES of bee-conventions will oblige us by sending us prompt notices of their local and State conventions.

THE Michigan State Bee-keepers' Association will meet at Grand Rapids, Mich., Dec. 31 and Jan. 1, next. Reduced rates have been secured at the Eagle Hotel; and as this will be during the holidays there will be generally reduced railroad rates. This is another of the

good conventions, and its reputation is high. It is right in the midst of some of the best and brightest bee-keepers in the country, and we urge all those to attend who can.

We have all our hives now elevated on Heddon hive-stands—the same stand that he used under his original eight-frame hive; and we believe he also uses them now under his new divisible-brood-chamber hive. We like them the best of any thing we have seen or tried for the purpose. But, more anon in regard to them and their use.

In another column will be found a notice of the Northwestern Bee-keepers' Association, to be held in Chicago, Thursday and Friday, Nov. 19 and 20. A. I. Root will take in the convention on his way to meet Prof. Cook at Denver, Dec. 1. Of course, Dr. Miller will attend. This association has the reputation of having some of the best conventions, and some think them equal to those of the North American. We trust that every one who can be present will make a special effort to go.

DR. MILLER, in his Straws, asks us if there is any more weight on two horizontal wires in his way of wiring than if he had two horizontal without any perpendicular wires. As you suggest, doctor, your wires would be drawn tighter; and the more a wire is pulled taut, the less strength it has. In horizontal wiring we recommend for the L. frame three wires; and, in addition, the top edge of the foundation should be fastened to the comb-guide above. This really makes four supports instead of two, as you had them, doctor.

It is now approaching the time to start another crop of bee-journals. Perhaps a suggestion to prospective editors may not be out of place. If you think there is a mint of money in bee-journalism, you may be disappointed; and if you think it will advertise your supply business, and lead you on the highway to success, you may be disappointed again. At any rate, do not put out the first edition poorly printed with poor ink on poor paper. If you do, its doom is sealed at once. Bee-keepers as a class have come to be quite fastidious.

We are now putting our outside winter cases on the Dovetailed hives of the Shane yard. We painted all of these cases Venetian red. As they are to be on only during the early spring, late fall, and during the winter, the red color, instead of being a detriment will be an advantage. Of course, it would not do to paint single-walled hives, or hives that are to be in use during the summer, red. Venetian red, as a paint, is a great deal more permanent than white, and therefore there are two reasons why it should be used on winter cases; viz., economy, and the additional warmth from the sun's rays.

We were just glancing over a bundle of letters when our eye took in the last number of the *Bee-Keepers' Review* which the clerk had just laid on our desk. The letters were immediately put down and the *Review* taken up. After we had glanced through it pretty thoroughly the question came to us, "What makes the *Review* so crisp? and why is it we take it up so quick when it comes? Is it because the editor quotes very largely from GLEANINGS in his 'Extracted' department?" No, not exactly, although that is a delicate compliment to this journal; it is because the editor throws his whole being into his paper. He loves it and his readers.

OUR apiarist is very much pleased with the new one-story Dovetailed chaff hive. It is but little heavier than the one-story single-walled hive, and yet has the same chaff-packing space that our old-style one-story chaff has had, that has given us splendid results for the past four or five years in wintering. We expect to use these new hives next summer in an out-apiary, and leave them permanently, or until such time as the necessities of the location may demand their removal. Although double-walled, they are so small that 30 of them may be loaded on to a wagon very easily, and they take no more space than 40 of the single-walled hives would. The projecting water-table makes them easy to handle.

We have just been looking at our Punics again. They are little black fellows, and they do not seem to show that nervousness that a lot of young black bees do among Italians. It is said that Punics will not sting, and we believe that some go so far as to state that they can not be made to sting. The bees in our yard are from select tested Punic queens, and our apiarist says they *will* sting. He picked up one by the wing and held it against his hand, and it actually did sting him. He picked up several others, and they did not. Then he tried Italians in a similar way, with similar results. The fact is, almost any bees will stick out their stings when you pick them up by the wings; but unless you squeeze them they rarely sting you even when you place the sting against your flesh.

It has sometimes been doubted whether it is necessary to go to the expense of importing queens, the argument being that we can breed at home a great deal better stock. This may be true; but the average home-bred queens, in our experience, are not quite as good for real business. Here is a letter that speaks for itself, and which came unsolicited:

*Mr. Root:*—The best imported queen arrived in good shape the day after being mailed at Medina. I introduced her successfully, and her progeny have now hatched in large numbers, notwithstanding her being introduced so late in the season. They are also far better workers than my five-banded stock, especially on cool days.

Hinchman, Mich., Oct. 26.

E. A. BOAL.

As we have reiterated before, stock that is bred for color is pretty apt not to be equal to that which is bred for business, and where color is made entirely secondary.

We are not really satisfied with white lead for a body paint to hives. It flakes off too easily. Common yellow ochre, were it not for the color, would be vastly ahead. Well, the permanence of white lead for a priming coat can be very greatly increased by the addition of about 50 per cent of yellow ochre. The second coat can then have one-third of ochre and two-thirds of lead. The resultant color will be a light cream so near white, we think, as not to make any practical difference as to the absorption of the sun's rays; and if all hives are shaded as they should be, either with shade-boards or shrubbery, it can certainly make no difference. Well, then, we have a paint that will outlast pure white lead. Those of you who have any thing to do with painting know that ochre makes an enduring priming coat. Venetian red is just as good, only the color is against it for single-walled hives, as pointed out elsewhere.

#### COUNTING THE COST.

If any one thinks there must be enormous profits in making bee-hives, he probably does not stop to consider the wear and tear of ma-



chinery, and the renewal of said machinery when worn out. Just recently one of our boilers—the oldest one—gave out, and we had to stop and reflow it; and now—it leaks again! We shall have to remove the defective flues, and put others in their place. A few weeks ago our boiler feed-water heater gave out, and another had to be ordered to take its place. This is only a very few of the many losses every manufacturer has to encounter. All of these expenses, if not figured in the cost of production, have to come out of the profits. A certain supply-dealer started up a few years ago to put in a manufacturing plant of his own. Before that, he had been buying all of his hives and fixtures, and selling on commission, and was doing a fairly good business. But now he bitterly repents the project of going into manufacturing. Instead of increasing his profits as he thought, he made his goods at a loss, and so has many another one who thought he could make his material cheaper than to buy it. The trouble is, with many who go into the business, they figure only two things—cost of labor and cost of material. They forget to add in quite a large item of wear and tear of machinery, cost of renewal, breakdowns, an occasional fire, cost of insurance, interest on the money, mistakes, lack of experience, storage, maintenance of buildings, and a thousand and one other things that eat into the profits. We do not say that there are not some few small supply-dealers who make money at it; but we wish the prospective ones to count the cost and to count it right before they curse the day they went into the business. The fact should not be lost sight of, that a large plant can manufacture goods for less money, and that the incidental expenses are also less in proportion.

#### A BAD RULING IN REGARD TO SHIPMENTS OF COMB HONEY.

THE following illustrates just what we expected would take place, as we explained on page 701 of current volume. We felt very sure that the ruling that requires that all comb honey shall have the glass fronts covered with crating would work mischief, and so it is. The following is a letter from a prominent honey dealer:

**Mr. A. I. Root:**—We are receiving quite a few shipments of honey where the bee men are compelled to board the glass fronts, and honey has reached here in very poor shape, as freight-handlers are not aware of contents, and handle roughly. We are very heavy receivers of produce on this market, and have considerable influence with the railroad companies, and feel confident that we can secure the removal of the law compelling agents to "refuse honey in crates unless glass is protected;" but before attempting to take a voice in the above, we prefer corresponding with you. We are at all times ready to champion any cause to further the interests of the bee-men; so, command us when we can be of service. We have one complaint to make; and that is, that bee-men are trying to impose upon us by sending honey-dew, which we do not want to sell to the trade. S. T. FISH & Co.

Chicago, Oct. 24, 1891.

We wish that all interested bee-keepers and all commission merchants would send their protest to J. T. Ripley, Rookery, Room 733, Chicago. Mr. Ripley, as the pages of our journal have shown, has shown a disposition to grant concessions to bee-keepers when the rulings are manifestly wrong, and for this he has our hearty thanks. But with regard to crating packages of glassed comb honey, he does not see fit to modify the ruling. We feel sure, from what we know of him, that, when the facts are properly brought before him, and enough bee-keepers render their protest, he will grant us what we ask. We will send a marked copy of

this to Mr. Ripley, and request bee-keepers, and all others who have suffered in consequence of the ruling as it now stands, to send him a gentlemanly and courteous request that he let comb honey in glass-front shipping-cases go uncrated. The very purpose of the glass fronts is to show that the package is of a fragile character.

#### CONVENTION NOTICES.

The Michigan State Bee-keepers' Association will meet in Grand Rapids, Mich., on Thursday, Dec. 31st, 1891, and Friday, Jan. 1st, 1892. G. E. HILTON, Sec., Fremont, Mich.

The Northwestern Bee-keepers' Society will hold its annual convention at the Commercial Hotel, corner of Lake and Dearborn Sts., Chicago, on Thursday and Friday, Nov. 19 and 20, at 9 A.M. Arrangements have been made with the hotel for back room, one bed, two persons, \$1.75 per day each; front room, \$2.00 per day for each person. This date occurs during the exposition, when excursion rates on the railroads will be one fare for the round trip. W. Z. HUTCHINSON, Sec., Flint, Mich.

The first regular meeting of the Connecticut Bee-keepers' Association will be held at the Capitol, Hartford, Nov. 11th, commencing at 10:30 A.M.; afternoon session at 2:30. Papers will be read, followed by discussions, and it is hoped that all interested in bee culture will make an effort to be present. The Connecticut association is the ninth to affiliate with the North American Bee-keepers' Association.

Mrs. W. E. RILEY, Sec., Waterbury, Ct.

As previously stated, the meeting of the North American Bee-keepers' Association will take place at Albany, N. Y., Dec. 8 to 11. Our president has been working hard, and has secured reduced railroad rates from Chicago and the Mississippi River, and from the South. The meeting promises to be the best in the history of the association, and we hope the West will send a good delegation. Besides personal members' attendance, we expect every local and State association to send one or more delegates. This will be a good occasion for Western bee-men to become acquainted with the noted bee-keepers of the East, nearly all of whom will attend this meeting. Bee-keepers desiring to attend will please send their names either to the president, Mr. P. H. Elwood, Starkville, N. Y., or to the undersigned, as we intend to publish a full list of those who are expected to be present. C. P. DADANT, Sec., Hamilton, Ill.

#### SPECIAL NOTICES.

##### FIGWORT, OR SIMPSON HONEY-PLANT, SEED WANTED.

If any of our readers have any of the above to sell, please write, sending small sample. State how much you have, and what you want for it.

##### EARLY-ORDER DISCOUNT.

We desire to remind all you forehanded people who take advantage of early-order discounts, that the time is rapidly growing shorter when we allow the largest discount. Only a little over a month remains in which to secure the 5 per cent we allow on orders sent for goods for next season's use. On Dec. 1st the discount drops to 4 per cent, as you will see by referring to page 4 of our price list, where you will also find the limit of the goods to which the discount applies. I believe the number is increasing each year, of those who take advantage of this discount; and those who try the plan once, usually continue to do so, for they learn the great advantage of having their goods on hand to make up during the winter months, when time is plentiful; and when busy spring returns, and the bees begin to require "fixin's," they are at hand for immediate use, ready to secure the best possible results from the bees. The forehanded bee-keepers pursue this policy; but the slipshod ones wait till the last minute, when they haven't time to send for the best-made goods without incurring a loss in honey or swarms, and very often have to put up with a makeshift in the way of hives and fixtures. We have heard of cases of this kind so often that we offer the advice for your good, as well as to secure a larger proportion of orders during the dull season, when we have time to give them most careful attention. Many things point to a good season next year. Anticipate your needs, and order early.

**POULTRY.** Choice Fowls and Eggs for sale at all times. Finely illustrated circular free. GEER BROS., St. Marys, Mo. 21tdfb

### MOORE'S STRAIN OF ITALIANS. HOW THEY "ROLL" IN THE HONEY.

T. J. Moffit, Kemp's Mills, N. C., says: "They beat any thing I ever saw in the bee line. They are certainly 'rolling' in the honey now. One of them beats three of my others at work, and they seem very gentle. I would not take \$5.00 apiece for them." The above is in reference to 3 warranted queens sold to friend M., June 22, 1891. They were bred from my famous red-clover queen, whose daughters I am now selling at 80 cts. each, or 3 for \$2.00, by return mail. Safe arrival and satisfaction guaranteed.

**J. P. MOORE, Morgan, Pendleton Co., Ky.**  
In responding to this advertisement mention GLEANINGS.

**FOR SALE.**—One-horse-power Shipman Engine and Boiler, in good order; never used but a little. Cost \$125.00. Sell for \$60.00. With Barnes Circular and Scroll Saws, \$85.00. **D. S. BASSETT,**  
Farnumsville, Worcester Co., Mass.

### FOR SALE--5 TONS HUBBARD SQUASH.

Ripe and nice. Who wants them?

**M. ISBELL,** Norwich, Chenango Co., N. Y.

### PATENT WIRED COMB FOUNDATION HAS NO SAG IN BROOD-FRAMES. THIN FLAT - BOTTOM FOUNDATION

Has No Fish-bone in Surplus Honey.

Being the cleanest is usually worked the quickest of any Foundation made.



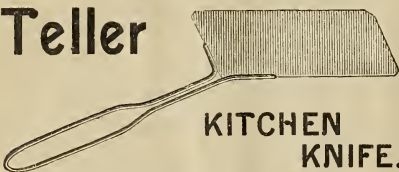
**J. VAN DEUSEN & SONS,**

Sole Manufacturers, 5tfid  
Sprout Brook, Montgomery Co., N. Y.  
Please mention this paper.

### Apiary and Storeroom for Sale.

In Central Iowa, 80 colonies Italian bees in modified 10-frame L. hives, and all necessary modern implements. A good supply of white clover, basswood, and a great variety of other bee-pasturage. No large apiary within ten miles; plenty of room for out-apiaries. Also a good location for a store or creamery. A good house with 12 rooms, new barn, 36x42 feet; good well and cistern; 20 acres of land, 3 acres used for raising truck, the rest for pasturage; all fenced with hog-tight fence. A fine lot of young basswood and other kinds of timber growing;  $\frac{1}{4}$  mile from school and Sunday-school. Reason for selling, old age and poor health. For further particulars, address **W. R. H.,** 17-19 21d  
St. Anthony, Marshall Co., Ia.

## Teller



**KITCHEN  
KNIFE.**

This is the knife we have sold for years as our 10-cent honey-knife. It has lately been improved by putting on a wire handle instead of the old one of cast iron. It is the invention of a woman, for work in the kitchen, such as chopping potatoes, turning pancakes, scraping kettles, etc. Many thousands have been sold for use in the kitchen, and they prove so satisfactory that the manufacturer makes the following guarantee:

Any purchaser who, after using the knife one month, may decide that she does not want it, may write me to that effect, stating the amount paid, whereupon I will return to her the said amount by mail.

**R. K. TELLER.**

They are excellent for scraping bits of comb and propolis from frames and hives, and can be used for uncapping. We have just bought our third lot of about a thousand, and offer them as follows:

Ten cents each. By mail, 15 cts., or 2 for 25 cts; 85 cts per doz.; or by mail, \$1.20; \$9.00 per gross, by freight or express.

**A. I. ROOT, MEDINA, OHIO.**

I MAKE THE

### Benton Shipping and Introducing Cage

in two styles, at \$10.00 and \$20.00 per 100. I am sending them all over the country. The largest queen-breeders are using them, and are enthusiastic in their praise. Send your order now, and get 5 per cent discount from above prices. A full line of

#### BEE-KEEPERS' SUPPLIES

always in stock. Catalogues free.

17-21d

**C. W. COSTELLO, WATERBORO, YORK CO., ME.**

In responding to this advertisement mention GLEANINGS.

### Syracuse, New York,

FOR ALL OF A. I. ROOT'S APIARIAN SUPPLIES.

FOUNDATION is Our Own Make.

**F. A. SALISBURY.**

In writing to advertisers please mention this paper. 4tfdb

### Job Lot of Wire Netting.

CUT PIECES AT A LOWER PRICE THAN FULL ROLLS.

Having bought from the factory, at our own price, five or six hundred remnants, as listed below, we are able to give you the choice of a great variety of pieces at the price of a full roll or lower. Full rolls of netting are 150 ft. long, and when they are cut we have to charge nearly double the full-roll rate, because it is so much trouble to unroll, measure, and cut, and run the risk of having a lot of remnants on hand. No doubt it is in this way that the following remnants have accumulated. It costs a good deal to get all this in shape so we can easily pick out from the lot the piece you want. But to move it off quickly, we put the price down so you can all have a chance at it. Remember, first come, first served. In ordering, therefore, name a second or third choice, or say that we may send the nearest we can if the piece selected is gone. On 5 pieces deduct 5 per cent, on 10 pieces 10 per cent. These remnants are shipped only from here. If any of you want to secure some, and don't want them shipped till later, when you will order something else, so as to save freight, pick out the pieces you want, send remittance with the order, with request to lay by till called for, and we will mark them as belonging to you. We prefer to ship them right out, however.

#### LIST OF POULTRY-NETTING REMNANTS.

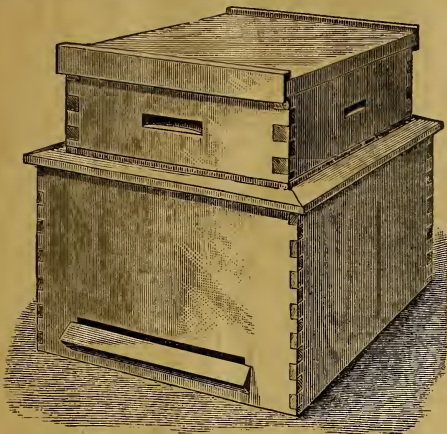
| Width in in's. | Size of Mesh. | No. of Wire. | Cts. p'r Sq. Ft.                                                        |
|----------------|---------------|--------------|-------------------------------------------------------------------------|
| 72             | 2             | 20           | 27.                                                                     |
| 72             | 2             | 19           | 103, 100.                                                               |
| 72             | 2             | 18           | 61, 53, 48, 35, 22, 22.                                                 |
| 36             | 2             | 17           | 23, 15.                                                                 |
| 36             | 2             | 16           | 23; 18 in. wide, 40; 24 in. wide, 94, 88.                               |
| 72             | 2             | 15           | 60, 58, 56; 30 in. wide, 46, 24; 48 in. wide, 48.                       |
| 36             | 2             | 14           | 37, 30; 12 in. wide, 100.                                               |
| 36             | 2             | 13           | 100, 90, 60, 52, 33, 13, 12, 60 in. wide, 21, 20.                       |
| 24             | 2             | 12           | 121, 23, 8; 72 in. wide, 36, 33, 9.                                     |
| 48             | 2             | 11           | 72, 49, 48, 45, 38, 37, 30, 29, 26, 14.                                 |
| 30             | 1 1/2         | 19           | 33, 36 in. wide, 47.                                                    |
| 42             | 1 1/2         | 19           | 85, 59; 60 in., 56; 72 in.                                              |
| 18             | 1 1/2         | 18           | 40, 14; 54 in., 13; 60 in., 34.                                         |
| 30             | 1 1/2         | 16           | 79; 36 in., 14; 42 in., 34; 48 in., 92.                                 |
| 36             | 1 1/2         | 20           | 22.                                                                     |
| 36             | 1 1/2         | 19           | 48, 12, 24 in., 42; 30 in., 75; 48 in., 78.                             |
| 36             | 1 1/2         | 18           | 15, 10; 42 in., 80; 48 in., 22; 72 in., 8.                              |
| 48             | 1             | 29           | 53; 72 in., 51; 30 in., 96; 9 in., 40.                                  |
| 24             | 1             | 19           | 26; 9 in., 24; 42 in., 50, 34; 48 in., 100, 40; 60 in., 26; 18 in., 50. |
| 32             | 1             | 18           | 85; 24 in., 23; 30 in., 69.                                             |
| 36             | 1             | 18           | 48 in., 30; 60 in., 59.                                                 |
| 9              | 3/4           | 29           | 7; 36 in., 55.                                                          |
| 24             | 3             | 16           | 19; 36 in., 86; 42 in., 14.                                             |
| 36             | 3             | 15           | 63; 48 in., 60.                                                         |
| 48             | 3             | 14           | 45; 72 in., 100, 70.                                                    |
| 14             | 4             | 3            | 166, 52, 35, 23.                                                        |
| 22             | 4             | 4            | 107, 68, 35, 17, 15.                                                    |
| 30             | 4             | 4            | 52, 47, 36, 33, 30, 29, 19, 18, 13, 9.                                  |
| 34             | 4             | 4            | 43, 37, 34, 25, 21, 23, 18.                                             |
| 42             | 4             | 5            | 68, 62, 62, 23, 22, 15, 12, 12, 12, 8, 6.                               |
| 46             | 4             | 5            | 82, 50, 44, 11, 5.                                                      |
| 18             | 13            | 2            | 68 ft.; 36 in., 300 ft. at 4c; 45 in., 247 ft. at 5c.                   |

Four and eight inch fencing. Price in fourth column is the price per foot in length.

**A. I. ROOT, Medina, O.**



## Dovetailed Chaff Hives.



If you prefer a permanent double-walled hive, the above is a safe one, and you will not find any thing cheaper. Try a few.

### PRICE LIST OF DOVETAILED CHAFF HIVES.

By adding to the winter case a  $\frac{3}{8}$ -inch inside body  $8\frac{1}{4}$  inches deep, with double bottom and tarred paper; you have the material to complete the Dovetailed chaff hive as shown above, where a super and cover are also added. This makes the simplest and cheapest winter hive ever offered for sale. By adding to the price of the regular Dovetailed hive as listed, page 21 of our price list, 75c each nailed, 50c each in flat, or 40c each in lots of five or ten in flat, you get the price of the Dovetailed chaff hive complete, in the same combinations. The price of the separate parts will be as follows:

| NAME AND DESCRIPTION.                                                 | N'd and<br>p'd each | In flat<br>5 | 10      | W'ght<br>of 10 |
|-----------------------------------------------------------------------|---------------------|--------------|---------|----------------|
| Dovetailed chaff hive, no cover or furniture.....                     | 1 20                | .80          | 3 50    | 6 50 150 lbs.  |
| Inside body with bottom, $\frac{3}{8}$ inch thick.....                |                     | .25          | 1 10    | 2 00 40 "      |
| Outside bottom $\frac{3}{8}$ inch with tarred paper and supports..... |                     | .13          | 55 1 00 | 30 "           |
| Outside body with sticks, no rims.....                                |                     | .30          | 1 40    | 2 50 60 "      |
| Rims for dovetailed chaff hive or winter case.....                    |                     | .12          | 55 1 00 | 20 "           |

A. I. ROOT, MEDINA, O.



30 Quarto pages—50 cents a year.

AN Elegant Monthly for the **FAMILY** and **FIRESIDE**. Printed in the highest style of the art, and embellished with magnificent Engravings. Sample FREE. Agents Wanted.

**THOMAS G. NEWMAN & SON,**  
PUBLISHERS  
CHICAGO, ILL.

**VANDERVORT**  
**COMB-FOUNDATION MILLS.**

Send for samples and reduced price list.

11td **JNO. VANDERVORT, Laceyville, Pa.**  
Please mention this paper.

## Barnes' Foot-Power Machinery.



Read what J. I. PARENT, of CHARLTON, N. Y., says—"We cut with one of your Combined Machines last winter 50 chaff hives with 7-inch cap, 100 honey-racks, 500 broad frames, 2,000 honey-boxes, and a great deal of other work. This winter we have doubled the amount of bee-hives, etc., to make, and we expect to do it all with this saw. It will do all you say it will."

Catalogue and Price List free. Address W. F. & JOHN BARNES, 545 Ruby St., Rockford, Ill.  
When more convenient, orders for Barnes' Foot-Power Machinery may be sent to me. A. I. Root.  
23td

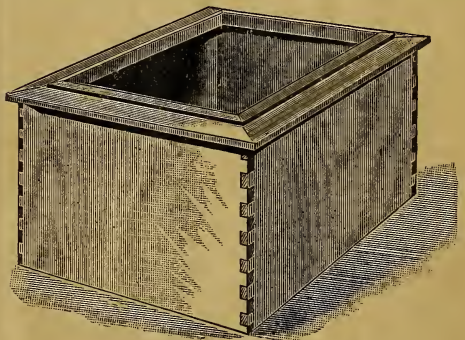
## Cash for Beeswax!

Will pay 25c per lb. cash, or 28c in trade for any quantity of good, fair, average beeswax, delivered at our R. R. station. The same will be sold to those who wish to purchase, at 31c per lb., or 35c for best selected wax.

Unless you put your name on the box, and notify us by mail of amount sent, I can not hold myself responsible for mistakes. It will not pay as a general thing to send wax by express.

A. I. ROOT, Medina, Ohio.

## Dovetailed Winter Cases



The time to prepare bees for winter is at hand, and you will make no mistake in using our new winter cases. They are the cheapest, and we think they are the best.

### PRICE LIST OF DOVETAILED WINTER CASES.

The winter case as above, includes the four boards forming the body, four pieces forming the rim, and four  $\frac{3}{8}$ -inch-square pieces for the lower edge. The chaff cushion and padding, as shown in Fig. 3, when sent put up, include chaff; but in flat, the cushion is sewed up ready for filling, and the strips of burlap or cotton are included to make the padding, but no chaff is included. For ten-frame hives not over 16 inches wide, outside measure, the same winter case can be used without the sticks and padding on the side.

| NAME AND DESCRIPTION.                              | Nailed and<br>p't'd each | In flat<br>10 | W'ght<br>of 10 |
|----------------------------------------------------|--------------------------|---------------|----------------|
| Dovetailed winter case.....                        | .50                      | .40           | 3.50 80 lbs.   |
| Dovetailed chaff cushion and padding.....          | .25                      | .20           | 1.50 5 "       |
| Winter case with cushion and padding complete..... | .75                      | .60           | 5.00 85 "      |
| Dovetailed telescope cover, shown in Fig. 6.....   | .35                      | .30           | 2.50 40 "      |
| Rims for winter case.....                          |                          | .12           | 1.00 20 "      |

To introduce them we allow the usual early order discount, which up to December, is 5 per cent.

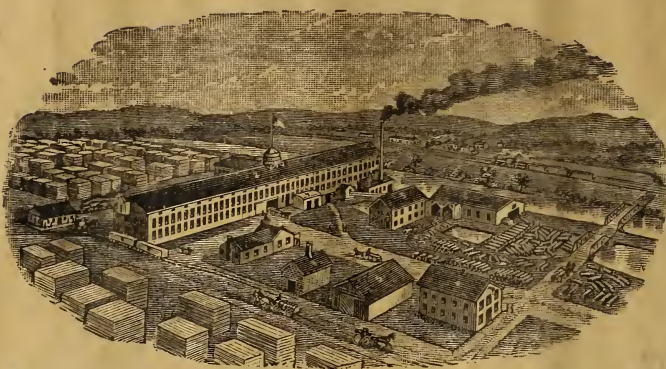
A. I. ROOT, MEDINA, O.



GLEANINGS IN BEE CULTURE.

# 5 PER CENT DISCOUNT

ON ALL



GOODS

## UNTIL DECEMBER 1ST,

EXCEPTING SHIPPING-CASES, AND HONEY JARS AND CANS.

Large Illustrated Catalog and copy of **THE AMERICAN BEE-KEEPER** (a 24-page monthly) free. Send for **FALL CIRCULAR**, describing our new

### OUTSIDE WINTER CASE FOR DOVETAILED HIVES.

CHEAPEST AND BEST MADE. Address

**THE W. T. FALCONER MFG. CO., Jamestown, N. Y.**

Please mention this paper.

## 1878. DADANT'S COMB FOUNDATION. 1891

HALF A MILLION LBS. SOLD IN THIRTEEN YEARS. OVER \$200,000 IN VALUE.

It is kept for sale by Messrs. T. G. Newman & Son, Chicago, Ill.; C. F. Muth, Cincinnati, O.; Jas. Heddon, Dowagiac, Mich.; O. G. Collier, Fairbury, Neb.; G. L. Tinker, New Philadelphia, O.; E. Kretchmer, Red Oak, Ia.; P. L. Viallon, Bayou Goula, La.; Jos. Nysewander, Des Moines, Ia.; C. H. Green, Waukesha, Wis.; G. B. Lewis & Co., Watertown, Wis.; J. Mattoon, Atwater, O.; Oliver Foster, Mt. Vernon, Ia.; C. Hertel, Freeburg, Ill.; E. T. Abbott, St. Joseph, Mo.; **E. Lovett, San Diego, Cal.; E. L. Gould & Co., Brantford, Ont., Can.;** Page, Keith & Schmidt, New London, Wis.; J. Stauffer &

Son, Nappanee, Ind., Berlin Fruit-box Co., Berlin Heights, O.; E. R. Newcomb, Pleasant Valley, N. Y.; L. Hanssen, Davenport, Ia.; C. Theilman, Theilman-ton, Minn.; G. K. Hubbard, Fort Wayne, Ind.; T. H. Strickler, Solomon City, Kan.; E. C. Eaglesfield, Berlin, Wis.; Walter S. Powder, Indianapolis, Ind.; Martin & Co., 1141 15th St., Denver, Col.; I. D. Lewis & Son, Hiawatha, Kan.; F. C. Erkel, LeSueur, Minn.; Mrs. J. N. Heater, Columbus, Neb.; Buckeye Bee Supply Co., New Carlisle, O.; Levering Bros., Wicota, Ia.; G. Dittmer, Augusta, Wis.; John Rey East Saginaw, Mich., and numerous other dealers.

It is **the Best**, and guaranteed every inch equal to sample. All dealers who have tried it have increased their trade every year.

### SAMPLES, CATALOG, FREE TO ALL. SEND YOUR ADDRESS.

1852

## LANGSTROTH ON THE HONEY-BEE. Revised.

1891

Those who wish a book in which they will find, without difficulty, whatever information beginners desire, should send for this work. Its arrangement is such that any subject and all its references can be found very readily, by a system of indexing numbers. It is the most complete treatise in the English language.

— A FRENCH EDITION JUST PUBLISHED. —

### HANDLING BEES, PRICE 8 CTS.

is a chapter of the Langstroth revised, and contains instructions to beginners on the handling and taming of bees.

Bee-veils of Best Imported Material. Samples FREE. Smokers, Honey Sections, Extractors, Tin Pails for Honey, Etc. Instructions to Beginners with Circular, Free.

**CHAS. DADANT & SON, Hamilton, Hancock Co., Ill.**

Please mention this paper.